QUESTION:

1. *What is this instrument?*
2. *What are the different components shown in the picture?*
3. *What is this used for?*

Key:

1. *It is Sagstaken Blakemore tube.*
2. *COMPONENTS:*
   a. *Stomach end.*
   b. *Esophageal end.*
   c. *Suction port for esophagus.*
   d. *Suction port for stomach.*
   e. *Esophageal balloon.*
   f. *Stomach balloon.*
3. *It is used for Tamponade in bleeding esophageal varices due to portal hypertension when other common remedial measures have failed.*

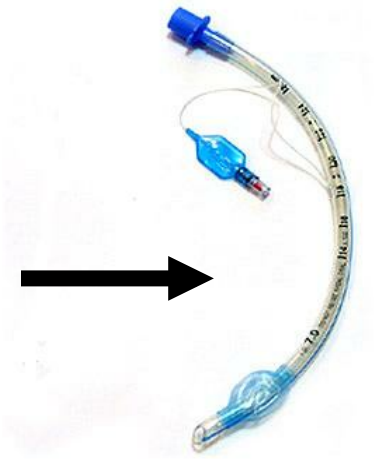
QUESTION:

1. *What is this instrument?*
2. *What are the indications for its use?*
3. *What are the contraindications?*
4. *What are complications which can arise by its use?*

Key:

1. *It is Nasogastric tube.*
2. *It is used for :*
   a. *Feeding the unconscious patients.*
   b. *Diagnostic in intragastric bleed*
   c. *Therapeutic Gastric lavage in Poisoning*
3. *C/I*
   a. *Corrosive poisoning*
4. *COMPLICATIONS*
   a. *Stricture*
   b. *Trauma to nose, pharynx, esophagus, and stomach.*
   c. *Local infections.*
   d. *Aspiration pneumonia due to marked reflux of gastric contents.*
   e. *Uncontrolled dietary intake due to non-selective intake of food and only liquids to be given.*

QUESTION:



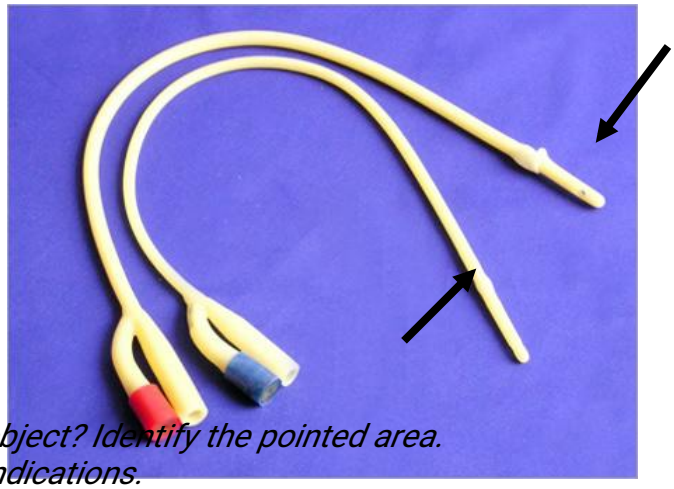
1. *What is this instrument and identify the pointed part of the instrument.*
2. *Write two indications.*
3. *Contra indications.*
4. *Write two complications associated with its use*

Key:

1. *Endotracheal tube ➔ Pointed end is tip*
2. *Indications*
   a. *CPR*
   b. *Anesthesia*
   c. *Mechanical ventilation in bed bound*
3. *Contraindications*
   a. *Cervical spine injury (alternative ➔ ??)*

4. *Complications*
    a. *Trauma during insertion*
    b. *Infections*

QUESTION:



1. *What is this object? Identify the pointed area.*
2. *Name three indications.*
3. *Contra indications?*
4. *Name Three complications associated with its use.*

Key:

1. *Foley's catheter ➔ pointed end is tip*
2. *Indications*
    a. *Therapeutic in retention of urine & therapeutic in intravesical chemotherapy*
    b. *Diagnostic urethrogram*
    c. *Urinary output in bed ridden patients*
    d. *Anesthesia and surgery*
3. *Contra indications*
    a. *Blood at meatus*
    b. *Acute urethritis*
4. *Complications*
    a. *Trauma*
    b. *Infections*
    c. *Urinary leak*

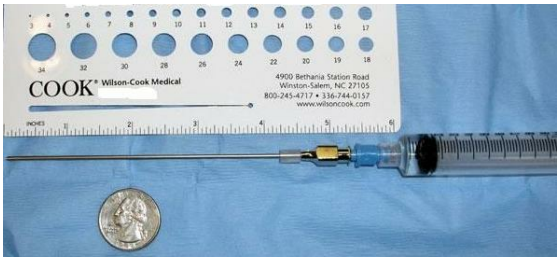
QUESTION:

1. *Identify the object.*
2. *Write four indications of its use.*
3. *Write two contraindications of its use.*
4. *Complications.*

Key:

1. *Lumbar puncture needle (sizes ➔)*
2. *Indications*
   a. *Diagnostic in meningitis, subarachnoid hemorrhage, GB, MS, PUO*
   b. *Therapeutic in intra thecal administration of drugs*
   c. *Spinal Anesthesia*
3. *Contraindications*
   a. *Increased ICP or papilledema*
   b. *Intracranial mass lesion on CT scan*
   c. *Local sepsis*
   d. *Bleeding disorder or meningococcal sepsis*
4. *Compilations*
   a. *Cerebellar herniation*
   b. *Hypotension*
   c. *Headache*

QUESTION:



Identify this object.
Write any four indications of its use
Write any two complications which can occur with its use.

Key:
As above

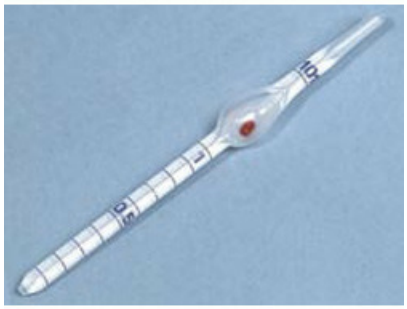
QUESTION

1. *What is the instrument shown?*
2. *What are the indications for its use?*
3. *What are the contraindications?*
4. *What are the sites of biopsy?*

Key:

1. *Bone marrow aspiration needle*
2. *Indications*
    a. *Diagnostic for Leukemia, Anemia, Pancytopenia, PUO*
    b. *Prognostic for Aplastic anemia, Agranulocytosis*
3. *contraindications*
    a. *local sepsis*
    b. *deranged coagulation profile*
4. *sites*
    a. *posterior iliac fossa*
    b. *body of sternum*
    c. *Tibia upper end*
    d. *lumbar spine*

QUESTION:



1. *Identify & supporting evidence?*
2. *Use?*
3. *Causes of raised RBC count?*
4. *How would to proceed?*
5. *How would your Rx?*

Key:

1. *RBC pipette with a red bead*
2. *Red cell count*
3. *Polycythemia (Primary e.g. PRV, Secondary like relative in Dehydration, Absolute 2 EPO with Normal sat O2 like malignancies of kidney, liver or High altitude like Northern areas or Oxygen deficiency with low sat O2)*
4. *Polycythemia (PCV > 45) with splenomegaly is PRV; Polycythemia with raised Red cell mass may be relative or absolute with raised EPO*
5. *Venesection / Hydroxyurea*

QUESTION:

1. *Identify & supporting evidence?*
2. *Use?*
3. *Causes of raised WBC count?*
4. *How would to proceed?*
5. *How would your Rx?*

Key:

1. *WBC pipette with white bead*
2. *White cell count*
3. *Causes (Neutrophil leukocytosis in Bacterial infections & Tissue damage like MI, Burns, Eosinophilia leukocytosis in Allergies, Skin infections, Parasitic infestations, vasculitis, malignancies like Hodgkin's & Non-Hodgkin's lymphoma, Basophilic leukocytosis in myeloproliferative disorders like CML, Monocyte leukocytosis in Chronic infections like TB, Bacterial endocarditis, Autoimmune diseases like SLE, IBD like UC, Lymphocytosis in Tuberculosis, Brucellosis, viral infections like IMN, Malignancies like lymphoma, leukemia)*
4. *Blood CP, Blood culture, PCR, Bone marrow biopsy, RA, ANA*
5. *Treat the cause*

QUESTION:

1. *Identify?*
2. *Names of different types of needles used for this procedure?*
3. *Procedure?*
4. *Indications?*
5. *Complications?*
6. *Contraindications?*

Key:

1. *Live biopsy needle (Trucut)*
2. *Sure cut & Trucut*
3. *Nil by mouth for 8 hours, PT/INR, Platelets > 100, written consent & Analgesia. ➔ Position, Clean, Mark by USG / Percuss the upper border, inject lignocaine locally, preload in Trucut, insert from the site of maximum dullness, Breath hold in expiration, Fire in Trucut, take out.*
4. *Unexplained hepatomegaly, Persistent raised LFT's, chronic hepatitis, Autoimmune hepatitis, Wilson's, Hemochromatosis, Cirrhosis, Cancer suspected, Biopsy of hepatic lesions, PUO*
5. *Right shoulder pain, Hemorrhage, Pneumothorax, hemobilia, biliary peritonitis, death.*

6. *Local infections, Deranges PT (>3sec from normal), low platelet count, Ascites, Uncooperative patient*

QUESTION:

1. *Identify?*
2. *Indications?*
3. *Procedure?*
4. *Complications?*

Key:

1. *Renal biopsy needle*
2. *Indications (cause of acute renal failure, Type of GN, Nephrotic syndrome, AGVH rejection)*
3. *Bed rest 24 hours, Blood CP for PLT, BT, Bleeding profile, BP, USG, Written consent, Analgesia ➔ Prone postions, USG markings, Breath holding, Local anesthesia, needle insertion and biopsy for histopathology and immunofluorescence.*
4. *Bleeding, Loin pain, Local infection*

QUESTION:

1. *Identify?*
2. *Use?*

3. *Definition?*
4. *Normal values?*
5. *Raised ESR?*
6. *Decreased ESR?*

Key:

1. *Westergren tube*
2. *Calculate ESR*
3. *It is the time taken by RBC's to sediment in the tube*
4. *Males (age divide by 2), Females (Age + 10) divided by 2*
5. *Causes (Anemia, Age, Pregnancy, infections like infective endocarditis, inflammation like SLE, RA, malignancies like MM)*
6. *Cause (Low proteins, increased viscosity, Polycythemia, sickle cell anemia, Cryoglobulinemia, Hypofibrinogenemia)*

QUESTION:

1. *Identify?*
2. *Components of blood?*
3. *How much Hb% increases by one unit of RCC?*
4. *How much platelets increase by 1 unit of Platelet conc.?*
5. *Cryoprecipitate?*
6. *Life span of RBC, Platelets, WBC?*
7. *Transfusions reactions?*
8. *Massive transfusion?*

Key:

1. *Transfusion bags*
2. *RBC (store @ 4 C for 35 days confirm compatibility) used for anemia, Platelet (store @ 22 C for 5 days use pooled ➔ pack is 15o ml & dose is 1 unit / kg) useful for thrombocytopenia or Platelet <10, FFP (store @ -30 C for 12 months use thawed ➔ pack is 250 ml & dose is 10-15ml/kg) for DIC, Liver disease, TTP, warfarin overdose*
3. *Cryoprecipitate 250 ml of FFP gives 15 ml cryoprecipitate (composition is factor 8,13, fibrinogen, fibronectin, VWF)*
4. *1 bag of RCC raises Hb by 1-1.5 %*

5. *1 bag of Platelets raises Platelets by 10,000*
6. *RBC 120 days, Platelets 5-9 days, WBC (neutrophil is 5 days)*
7. *Transfusion reactions*
    a. *Early (<24 hours)*
        1. *Early rise in temp >40 C in ABO incompatility (stop & Normal saline slowly) & Bacterial contamination (stop & Broad spectrum antibiotics) ➔ so stop the transfusion, inform hematologist, send unit + FBC + Urea electrolyte + Clotting + culture*
        2. *Late rise in temp <40 C in Non-hemolytic febrile reactions (slow or stop & Paracetamol use or leucocyte depleted blood), Allergy (slow or stop & Chlorpheniramine), Anaphylaxis (slow or stop & Adrenaline), TRALI (Stop transfusion & Treat @ ARDS), TACO (slow or stop & Diuretics, oxygen, exchange transfusion)*
    b. *Late (>24 hours)*
        1. *Infections (bacterial, protozoa, prion, HIV, Hep B/C, Virus)*
        2. *Iron overload (Treated with Desferioxamine)*
        3. *GVHD*
        4. *Post transfusion purpura ➔ fall in platelet count 5-7 days after transfusion ➔ treat with i/v immunoglobulin & Platelets*
8. *Massive transfusion is > 10 Units replacing whole blood*

QUESTION:

1. *Identify?*
2. *Use?*
3. *% FiO2 delivered by Non rebreathing mask, nasal cannula, venture mask?*

Key:

1. *Venturi mask controller*
2. *Delivery of different FiO2*
3. *Non rebreathing mask 60-90%, nasal cannula 40-60%, Venturi mask 24-60%*

QUESTION:

1. *What is the Mechanism of action of this drug?*
2. *What are the indications of its use?*
3. *What are the exacerbating factors?*
4. *What are the three complications encountered with its use?*
5. *Interaction with Amiodarone?*
6. *How would you treat an overdose?*

Key:

TAB. DIGOXIN .25 mg

1. *It is a Na/K pump inhibitor with inotropic effect*
2. *Indications.*
   a. *Congestive heart failure.*
   b. *Atrial fibrillation (SVT without pre- excitation syndrome) to control ventricular rate.*
3. *Exacerbating factors.*
   a. *Hypokalemia, Hypomagnesaemia, Hypercalcemia*
4. *Complications.*
   a. *Atrial (Supraventricular) tachycardia with atrioventricular block*
   b. *Ventricular arrhythmia.*
   c. *Blurred vision with altered color vision.*
   d. *CNS side effects like confusion*
   e. *GIT side effects like nausea, vomiting and anorexia.*
5. *Dose of Digoxin should be reduced as Amiodarone displaces digoxin from protein binding sites increases levels of digoxin.*
6. *Toxicity treatment*
   a. *stop the drug*
   b. *correct electrolytes*
   c. *Treat arrhythmias (svt with verapamil, vt with lignocaine)*
   d. *Use digibind*

QUESTION:

1. *MOA?*
2. *Dose?*
3. *Indications?*
4. *S/E?*
5. *Pregnancy?*
6. *Drug interactions?*

Key:

1. *Class III anti arrhythmic with both beta blocker + K channel blocking effects (affects repolarization phase)*
2. *Dose*
   a. *Oral loading dose 200 mg TID for 7 days, 100mg BID for 7 dyas, than maintenance 200 mg OD*
   b. *i/v loading dose of 600 mg over 60 min, maintenance dose of 900 mg/ day*
3. *VF, VT, AF*
4. *Skin pigmentation, Hypo or Hyperthyroidism, Corneal deposits, Lung fibrosis, Hepatitis.*
5. *C/I in pregnancy.*
6. *Potentiates effects of Digoxin & warfarin.*

QUESTION:

1. *What are the three life threatening conditions in which it can be used?*
2. *What are the two major complications which are encountered in its use?*

ANSWER S

1. *Three life threatening conditions for its use.*

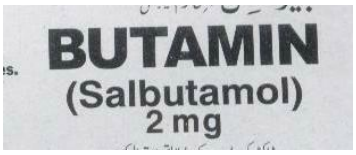
a). Acute anaphylaxis (anaphylactic shock)
b). In CPR to produce cardiac activity by its chronotropic effects and by conversion of coarse VF to fine VF which responds well to Cardioversion.
c). In acute severe asthma (life-threatening) in young.

2. *Side effects.*

a). CNS: Anxiety, tremors, fear tension and headache.
b). Cardiac arrhythmia both supra-ventricular and ventricular.
c). Pulmonary edema in patients with already poor cardiac status and precipitation

of ischemic episode in patients with IHD.

QUESTION:



1. *MOA?*
2. *Indications?*
3. *S/E?*

Key:

1. *Short acting Beta 2 agonist*
2. *Indications*
   a. *Asthma as bronchodilator*
   b. *Anaphylaxis to relieve bronchospasm*
   c. *Hyperkalemia*
   d. *Tocolytic to delay labor (Terbutaline also used)*
3. *S/E*
   a. *Tremors*
   b. *Tachycardia & Arrhythmias*
   c. *Anxiety, headache*

QUESTION:

1. *MOA?*
2. *Monitoring?*
3. *Why Heparin to warfarin conversion is necessary?*
4. *Uses/ indications?*
5. *Target INR?*
6. *Duration of treatment?*
7. *S/e & c/i?*
8. *Pregnancy & Lactation?*
9. *Interactions?*
10. *Treat overdose?*

Key:

1. *<u>MOA:</u> inhibits VkOR (i.e. vitamin K epoxide reductase) i.e. Factors II, VII, IX, X*
2. *Affects Extrinsic pathway & increases PT*
3. *Heparin to warfarin conversion is necessary because warfarin inhibits protein c and s before inhibiting vitamin k causing paradoxical hypercoagulability.*
4. *<u>USES</u>: secondary prophylaxis in venous thromboembolism e.g. artificial valves, <u>A</u>ntiphospholipid antibody syndrome, <u>D</u>VT, <u>E</u>mbolism, <u>F</u>ibrillation,*

5. *DOSE: start with 5mg and titrate against INR (2-3) except prosthetic valves (3-4.9)*
6. *DURATION: 6 weeks for risk factor below knee, 3 months for identified cause above knee, 6 months for unidentified cause, indefinitely for identified non modifiable cause*
7. *Warfarin*
   a. *s/e: Bleeding (esp. in combination with anticoagulants e.g. Aspirin), BMD decreased i.e. Osteoporosis, C proteins deficient individuals develop warfarin necrosis of skin & limbs, Cholesterol deposits break to cause purple toe syndrome in 3-8 weeks, Drug interactions*
   b. *c/i: Aneurysms, BP, Cirrhosis, DU, Endocarditis*
8. *PREGNANCY: Vitamin K is small easily crossed placenta and is teratogen, it causes fetal warfarin syndrome with Hypoplasia of the bones, Can FEED.*
9. *Drug interactions:*
   a. *Deficiencies of Vitamin K dependent Factors is caused by CEPHALOSPORINS e.g. Cefamandole, Cefoperazone, Cefotaxime, Moxalactum (N ethylthiotetrazole side chain)*
   b. *DRUGS POTENTIATING EFFECTS OF WARFARIN: Alcohol, Borage oil (starflower), Cranberry juice, Drugs, Erythromycin, Flagyll, Garlic, Ginger*
   c. *St John's wort decreases the effect of Warfarin by increasing its breakdown*
   d. *Alternatives; short acting Acenocoumarol, long acting Phenprocoumon, Debigatran & Rivaroxaban don't require monitoring*
10. *ANTIDOTE: Prothrombin complex, oral or I/V Vitamin K*

- *INR <6 … reduce warfarin till INR <5*
- *INR 6-9 … omit warfarin and reintroduce when INR <5*
- *INR >9 … no bleed / Minor bleed like bruises of sub conjunctiva hemorrhages, stop warfarin + 0.25-0.5 mg oral vitamin K*
- *Major bleed … Prothrombin complex, FFP, I/V Vitamin K*
- *Brodifacoum (Rat Poison) is SUPERWARFARIN, requiring 50-100mg/day Warfarin (10-15mg s/c or i/m (i/v causes Anaphylaxis) for Weeks*
- *P450: INDUCERS: Alcohol – Barbiturates – Carbamazepine – Dexamethasone – Griseofulvin – Phenytoin – Quinidine – Rifampin*
- *P450: INHIBITORS: Cimetidine – Ritonavir – Isoniazid – Clarithromycin – Ketoconazole – Erythromycin - Tinned juice (Grapefruit Juice)*

QUESTION:

1. *MOA?*
2. *Indications?*
3. *S/E?*

4. *Antidote?*
5. *HIT?*
6. *Alternative treatment in HIT?*

Key:

1. *MOA: Binds Anti thrombin 3 and potentiates it 1000 times, affects intrinsic pathway increasing PTTK, Decreases Fibrinogen*
2. *USES: ACS, Bypass, CVP, DVT, Embolism, Fibrillation, Hemofiltration (bcoz LMWH is not excreted due to kidney failure & Also Heparin is short acting), indwelling catheters*
3. *S/E: Antigenicity (use Danaparoid (Orgaran) is a mixture of Heparan sulphate, chondroitin sulphate & Dermatan sulphate, cross reactivity <10%), Needs monitoring, I/V administration, Osteoporosis, HIT, shorter half-life and frequent administration (one hour half-life), Hyperkalemia (suppression of aldosterone), elevated Aminotransferases*
4. *ANTIDOTE: Protamine sulphate 1mg for every 100 U of heparin, S/E of Bronchoconstriction & Hypotension, so give slow*
5. *Heparin induced thrombocytopenia has two forms, (HIT 1) one is due to sequestration in spleen i.e. Clumping (Immediate & Mild) with rarely PLT <100, 000, (HIT 2) second is due to antibody formation (Delayed 4 days & moderate) leading to <50,000, arterial thrombosis is a complication*
6. *Use direct thrombin inhibitors i.e. Lepirudin & Argatroban*

- *Warfarin monotherapy is C/I in acute HIT*

QUESTION:

1. *Write two indications?*
2. *What is the mechanism of action?*
3. *Write two side effects?*

Key:

1. *It is a loop diuretic.*
2. *It act at the thick segment of ascending limb of Henle where it blocks the Na, K, 2Cl pump and thus inhibiting the Na absorption which results in large amount of Na excretion along with water. It is very effective diuretic.*

3. *Hyponatremia, Hypokalemia, Hypovolemia, Metabolic alkalosis, Hyperuricemia, Hypomagnesaemia, Hypercalciuria and hyperglycemia.*

QUESTION:

1. *What is the drug?*
2. *What are the three indications for its uses?*
3. *What are the two contraindications for its use?*
4. *Name any four other drugs belonging to this group?*

Key:

1. *It is a non-cardio selective B- adrenoceptor blocker drug.*
2. *Indications for use*
    a. *IHD (Angina, primary prophylaxis and secondary prophylaxis of myocardial infarction)*
    b. *Hypertension alone or in combination.*
    c. *Supraventricular and ventricular arrhythmias.*
    d. *Thyrotoxicosis to control heart rate.*
    e. *In variceal bleed to reduce splanchnic circulation.*
    f. *Essential tremors.*
    g. *Anxiety disorders.*
    h. *In combination with other drugs in cardiac failure in low dosage to control heart rate and improve heart failure.*
    i. *In preparation of pheochromocytoma.*
3. *Contra indications*
    a. *Bronchial asthma.*
    b. *Bradycardia*
    c. *Cardiac decompensation*
    d. *Diabetic symptoms*
    e. *Extremity or Peripheral vascular disease*
    f. *Peripheral arterial occlusive disease.*
4. *Drugs*
    a. *Betaxolol, Atenolol, Acebutalol, Esmolol, Carvedilol*

NIFEDIPINE

1. *MOA?*
2. *Uses?*
3. *S/E?*
4. *Name Cardio selective?*

Key:

1. *Dihydropyridine Calcium channel blocker (vascular effects > cardiac effects)*
2. *Indications*
   a. *Angina*
   b. *Hypertension*
   c. *SAH (Nimodipine 60mg only)*
   d. *SVT (cardio selective calcium channel blockers)*
3. *S/E*
   a. *Cardiac (myocardial depression & Hypotension)*
   b. *Non cardiac (Headache, Flushing, Constipation, Peripheral edema)*
4. *Cardio selective calcium channel blockers are used for rate control in SVT*
   a. *Diltiazem*
   b. *Verapamil*

CAPTOPRIL

1. *MOA?*
2. *Indications?*
3. *Side effects?*
4. *Name others?*
5. *Alternative?*

Key:

1. *ACE inhibitor ➔ Arteriolar and venular dilator*

2. *Indications*
    a. *Heart failure ➔ study & Algorithm*
    b. *Hypertension ➔ Algorithm*
    c. *DM (micro albuminuria) ➔ Algorithm*
3. *Side effects*
    a. *Cough & Angioedema ➔ use ARB*
    b. *First dose phenomenon ie hypotension ➔ take @ night*
    c. *Hyperkalemia*
4. *Captopril, Enalapril, Lisinopril, Fosinopril*
5. *ARB or Angiotensin receptor blockers*

CLOPIDOGREL

1. *MOA?*
2. *Uses?*
3. *S/E?*

Key:

1. *ADP receptor blocker on platelet membrane*
2. *Indications*
    a. *TIA*
    b. *Coronary (Angina, STEMI, NSTEMI)*
3. *S/E*
    a. *Neutropenia*
    b. *TTP*
    c. *Hemorrhage*

ASPIRIN

1. *MOA?*
2. *Uses?*
3. *S/E?*

Key:

1. *Irreversible COX 2 inhibitor*
2. *Indications*
    a. *Anti-inflammatory, Anti pyretic, Analgesic*
    b. *Prevention of heart attack*
    c. *Post CABG*
3. *S/E*
    a. *GIT bleeding*
    b. *Rye's syndrome*
    c. *Allergy*

INSULIN

1. *MOA?*
2. *Types?*
3. *Sites?*
4. *Indications?*
5. *S/E?*

Key:

1. *Exogenous supplementation of insulin*
2. *Ultra short, short, intermediate, long acting, ultra long acting*
3. *Upper outer arm, abdominal fat, back, thigh*
4. *IDDM, DM, HONK*
5. *S/E*

21.35 Side-effects of insulin therapy

- Hypoglycaemia
- Weight gain
- Peripheral oedema (insulin treatment causes salt and water retention in the short term)
- Insulin antibodies (animal insulins)
- Local allergy (rare)
- Lipodystrophy at injection sites

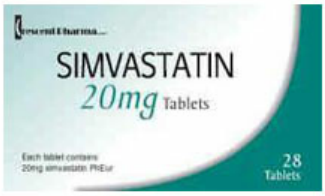
METFORMIN

1. *MOA?*
2. *Uses?*
3. *S/E?*

Key:

1. *Peripheral sensitization to insulin and increased hepatic uptake of insulin (Biguanide)*
2. *Indications*
   a. *Type 2 DM*
   b. *PCOS*
   c. *Pre diabetic*
3. *S/E*
   a. *GIT (nausea, vomiting, Flatulence)*
   b. *Lactic acidosis*
   - *Don't use if Creatinine is > 150 (renal or hepatic failure)*

SIMVASTATIN

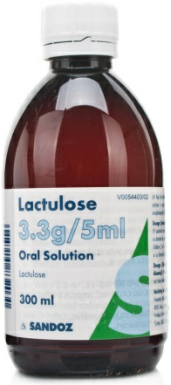


1. *MOA?*
2. *Indications?*
3. *S/E?*
4. *Name other drugs of this class?*
5. *Other anti-hyperlipidemias?*

Key:

1. *HMG Co A reductase inhibitors*
2. *Indications*
   a. *Hyperlipidemia*
   b. *Primary & Secondary prevention of coronary heart disease*
3. *S/E*
   a. *Abdominal pain*
   b. *Diarrhea*
   c. *Indigestion*
4. *Simvastatin, rousvastatin, pravastatin, atorvastatin*
5. *Niacin, Bile acid binding resins, co A reductase inhibitors, Diet, Ezetemibe, Fibrates*

LACTULOSE



1. *MOA?*
2. *Uses?*
3. *S/E?*

Key:

1. *Synthetic non digestible sugar*
2. *Indications*

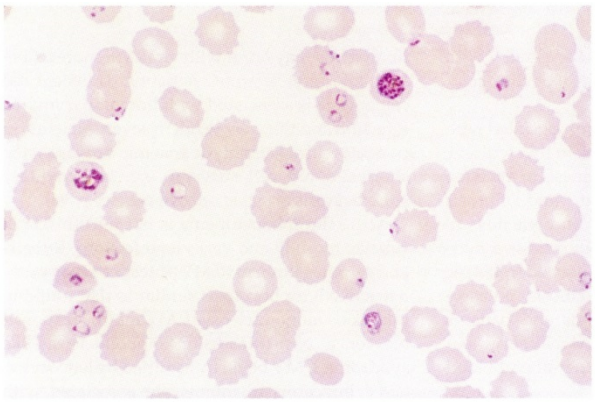
a. *Hepatic Encephalopathy*
b. *Constipation*
c. *Lactulose breath test ➔ small intestinal breath test*

3. *S/E*

a. *Nausea, vomiting*
b. *Flatulence*
c. *Abdominal cramps*

QUESTION

A 28 years old farmer is admitted in ICU with history of fever with chills and rigors of 8 days duration. He has been confused in last 3 days and has been unresponsive since 1 day. Clinical examination reveals Temp 103 F, neck supple and 3 cms splenomegaly. The Blood picture of this patient is given below:



1. *What is the abnormality?*
2. *How it is transmitted?*
3. *Types?*
4. *What is the complication it has caused?*
5. *Define cerebral malaria?*
6. *How will you diagnose?*
7. *Treatment of cerebral malaria?*
8. *Treatment in Pregnancy?*
9. *Treatment of BT & MT Malaria?*
10. *What is the prophylaxis?*
11. *S/E of drugs?*
12. *Define recurrence, relapse, and recrudescence?*
13. *Treat Hypnozoite?*

ANSWER:

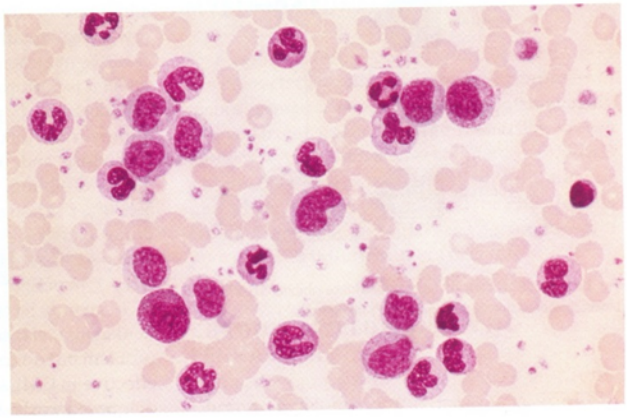
1. *Plasmodium Falciparum infection.*
2. *Bite of female anopheles mosquito*

3. *Falciparum, vivax, ovale, malaria, Kanasi*
4. *Cerebral Malaria.*
5. *Clouding of consciousness with or without fever (may have used prophylaxis)*
6. *thick & thin blood films (BT or MT rings), Parasite count, Blood CP (HB, Platelets), LFT, PT/INR, RFT, Urine RE, CXR, ABGs*
7. *Treatment:*
    a. *GENERAL THERAPY: ABC, Diagnose parasite count (>75% decrease after 48 hours), Exchange plasma, Fluids, Glucose, HD, Intubate & Ventilate*
    b. *SPECIFIC THERAPY: I/V Quinine with D/W (20mg/kg in 4 hours, than 10mg/kg in 4 hours TDS or 3mg/kg/24 hours infusion) or Artesunate 2.4 mg/kg im or iv & 1.2 mg/kg after 12 hour than daily or Artemether 3.2 mg/kg im or iv & 1.6 mg/kg daily until the patient can tolerate oral, ORAL: if patient is swallowing and has no complications of Shock, ARDS, Renal failure, Acidosis than Artem DS plus (80/240) 2 BD for 3 days or Malarone 4 OD for 3 days, CQ 600 mg TDS + Doxycycline 200 mg OD or Clindamycin 600 mg BD for 7 days*
8. *During pregnancy, Chloroquine is safe, and quinine, Sulfadoxine/Pyrimethamine, and doxycycline may be used despite potential fetal risks because morbidity and mortality of malaria is so high.*
9. *Chloroquine in sensitive areas 4 stat, 2 after 8 hours, 2 OD for 2 days, Quinine in resistant areas 600 mg TDS + Doxycycline 200 mg OD or Clindamycin 600 mg BD (in pregnancy) for 7 days*
10. *Prophylaxis:*
    a. *Mosquito prophylaxis (use sprays over mosquito breeding places, repellants, long sleeves, nets)*
    b. *Drug prophylaxis (Mefloquine 250 mg weekly, Doxycycline 100 mg daily, CQ 2 tab (300 mg) weekly, (all 1 weeks before till 4 weeks after travel), Malarone 1 tab 1 day before to 7 days after)*
11. *S/E:*
    a. *Primaquine - severe hemolytic anemia in G6PD deficiency*
    b. *Mefloquine - irritability, bad dreams, GI upset, and, to a lesser extent, seizures and psychosis.*
    c. *Sulfadoxine/Pyrimethamine (Fansidar) is a sulfa drug - Stevens-Johnson syndrome.*
    d. *Atovaquone/Proguanil (Malarone) - GI toxicities.*
    e. *Halofantrine (rarely used in the United States) - QT prolongation.*
    f. *Doxycycline - photosensitivity and GI upset.*
12. *Re infection with Falciparum is recurrence, increase parasite proliferation residing in blood is recrudescence, increase parasite proliferation residing in liver is called relapse.*
13. *Primaquine is used for relapse of hypnozoit forms 15 mg daily for 14 days*

QUESTION:

A 55 years old school teacher reports to you for increasing weakness and lassitude with growing pallor and dragging sensation in Left upper abdomen. Clinical examination

shows marked pallor and massive splenomegaly.
The following is the blood picture.



1. *What is the abnormality?*
2. *Diagnosis?*
3. *What are the further pertinent investigations for diagnosis and treatment?*
4. *What is the treatment option?*

ANSWER

1. *Immature cells of myeloid series like Myelocytes, metamyelocytes, myeloblasts and band cells*
2. *Chronic myeloid leukemia.*
3. *Bone marrow trephine biopsy for histopathology and determination of Philadelphia chromosome. (Ch 9:22 or BCR:ABL gene)*
4. *Treatments*

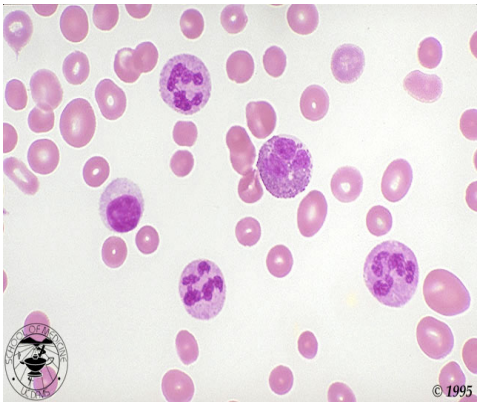
a. *Imatinib*
b. *Interferon.*
c. *Bone marrow transplant.*

QUESTION

A 55 years old hypothyroid lady presents with anemia.

Or

A 30 years old lady presents with history of progressive fatigue and tingling and numbness of extremities for six months. She is very pale and both ankle jerks are absent with bilateral up going planters.
Hb 8gml, TLC 2900, Platelets 120,000. Bilirubin is 3mg/dl, ALT 30, ALP 90. Retics are 3.5%. CT scan brain is normal. Her peripheral blood film is shown here.



1. *What is the abnormality seen in the slide?*
2. *Diagnosis?*
3. *Causes of macrocytic anemia?*
4. *Causes of folic acid deficiency and amount of reserve in the body?*
5. *Causes of B12 deficiency and amount of reserve in the body?*
6. *What are the other three hematological features of this disease?*
7. *What is pernicious anemia?*
8. *Salient features of Pernicious anemia?*
9. *Schilling and interpretation?*
10. *Treatment?*

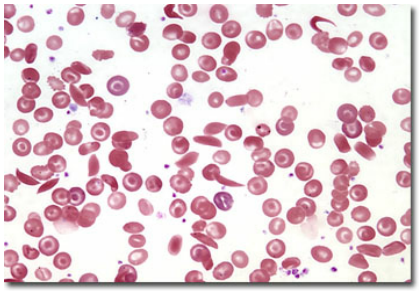
Key

1. *Macrocytic picture*
2. *Megaloblastic Anemia.*
3. *Folic acid deficiency, Alcohol, Thiamin deficiency, Reticulocytosis, B12 deficiency, Chemotherapeutic drugs or antifolate agents, Gestation, Hypothyroidism*
4. *Alcohol, Blood loss/ Broad spectrum antibiotics, Celiac disease, Drugs e.g. decrease absorption of folic acid (Phenytoin, Primidone, OCP's), DHFR inhibitor (Methotrexate, Pyrimethamine, Trimethoprim), Erythropoiesis, Folate deficient diet i.e. Decreased Green leaves & Vegetables, Liver, Microorganisms, Gestation, Hemodialysis/Hemolysis, Inc. requirements e.g. malignancy (body reserves can sustain 3 months)*
5. *B12 deficient diet i.e. liver, animal products i.e. in vegetarians, Blind loop i.e. ileal resection, Crohn's resection, Diverticulum, Diphyllobothrium (body reserves can sustain 3 years)*
6. *Hematological features*
   a. *Hemoglobin often reduced and may be very low.*
   b. *MCV usually is raised commonly more than 120fl.*
   c. *Erythrocyte count usually low and not matching degree of anemia.*
   d. *Reticulocyte count – low for degree of anemia.*
   e. *Leucocyte count low for degree of anemia.*
   f. *Platelet count low or normal.*
   g. *Bone marrow: Hyper cellular with maturation arrest and showing Megaloblastic changes in erythroid series, giant metamyelocytes, dysplastic megakaryocytes, increased iron in stores.*
   h. *Serum B12 <100 is diagnostic & >170 <240 is overt deficiency or*

methylmelonic acid & RBC folate levels < 150 pg/dl diagnostic

7. *B12 deficiency due to autoimmune Gastritis (anti intrinsic factor Ab > Anti parietal Ab)*
8. *Pancytopenia + Neurological feature of Posterior column syndrome with Brisk knee + Extensor planters + Absent ankle (neurological feature may present in the absence of blood findings)*
9. *Schilling test*
10. *Treatment*
    a. *100 mcg I/M daily for 7 days, than weekly for next month, than monthly for life, Reticulocytosis response in 7 days, hematological response in 2 months. Oral dose is 1000 mcg/day.*
    b. *Folic acid replacement*
    c. *Iron replacement*

QUESTION:



1. *What is the abnormality seen in the blood smear?*
2. *What is the molecular defect in hemoglobin?*
3. *Precipitating conditions?*
4. *Protective factors?*
5. *Mention any three complications of this disease?*
6. *When vaccination should be done?*

Key:

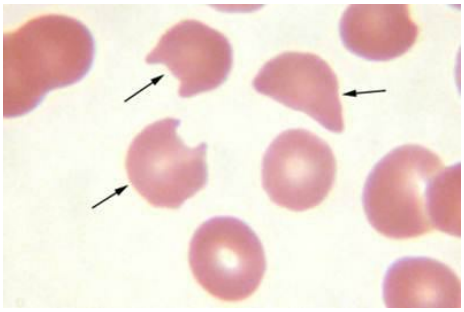
1. *Sickle cell anemia.*
2. *Autosomal recessive disorder in which glutamic acid is replaced with valine at 6 position of Beta globulin polypeptide chain.*
3. *Acidosis, BPG (2, 3 bisphosphoglycerate), CO2, Dehydration, Gas deficiency i.e. Oxygen deficiency, Height, Infections*
4. *F Hb is protective (concentrations can be Inc. with Hydroxyurea)*
    a. *Complications (Swelling of hand and feet, stroke, infections, infarctions, crisis like bone, pain, aplastic, sequestration, cholelithiasis, Kidney problem, Liver & lung problems, Eye problems, Erection problems.*
5. *Treatment: HOPE For Vaccination & Exchange transfusions (Hydration/Hydroxyurea 500-750 mg/d increases Hb F concentrations by increasing hemopoiesis, O2, Pain killers, Folic acid 1mg daily)*
6. *Pneumovax → 2 weeks prior to elective splenectomy → as soon as possible*

after emergency splenectomy → 5months after immunosuppressive therapy

QUESTION:

A 30 years old male presents with high grade fever with chills and rigors for 3 days. He has received antimalarial and Paracetamol from a GP.

HB (6gm/dl), MCV (110), TLC (69,00), Platelets (180,000), Bilirubin (5.4mg/dl), ALT (30 iu/L), ALP (90 iu/L), Peripheral Blood film (No MP seen)



1. *Identify cells?*
2. *What is the most likely diagnosis?*
3. *Name four agents which can precipitate an attack of this illness?*
4. *Write two treatment steps?*

Key:

1. *Bite cells*
2. *G 6PD deficiency (X linked recessive)*
3. *Drugs*
    i. *Asprin*
    ii. *Antimalarials*
    iii. *Sulphonamides*
    iv. *Quinolones etc…*
4. *Treatment*
    i. *Blood transfusion*
    ii. *Avoid offending drug*

QUESTION:

A 20 years factory worker from a village of Faisalabad reported to hospital with c/o increasing pallor and dyspnea on exertion. His blood count reveled Hb (6g%), MCV (60 fl), Eosinophil count (20 %),

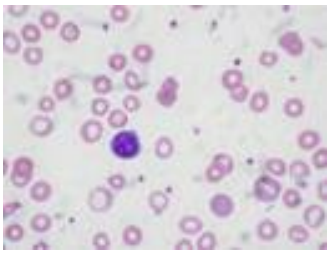
QUESTION:

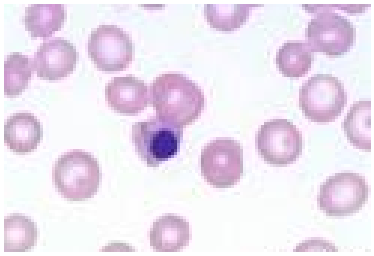
A 5 year old child presented to a pediatric OPD with pallor and lethargy. He belongs to a

poor socioeconomic family and indicated a poor dietary habit. His Complete Blood Picture shows;

Complete Blood Picture - Normal Range

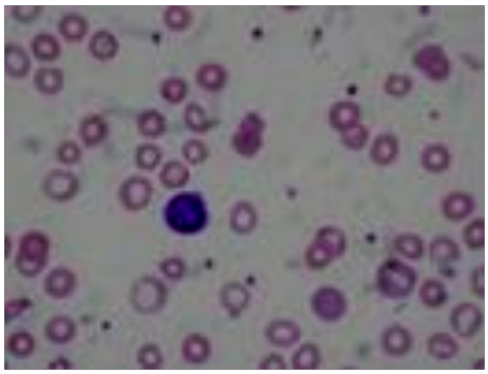
WBC	*10.4 x 10^3 /uL*	*4 – 11 x 10^3 /uL*
RBC	*4.54 x 10^6 /uL*	*3.5 – 5 x 10^6 /uL*
Hb	*6.8 g/dL*	*11.5 – 15 g/dL*
HCT	*24.2 %*	*33 – 43 %*
MCV	*53.3 fL*	*70 – 100 fL*
MCH	*15.0 pg*	*27 – 35 pg*
MCHC	*28.2 g/dL*	*33 – 37 g/dL*
Platelets	*667 x 10^3 /uL*	*150 – 400 x 10^3 /uL*





QUESTION:

A 25-year-old lady with a history of menorrhagia for one year, presented with pallor to the OPD. She also has difficulty in swallowing. Photo-micrograph of her Peripheral Blood Smear is given below.



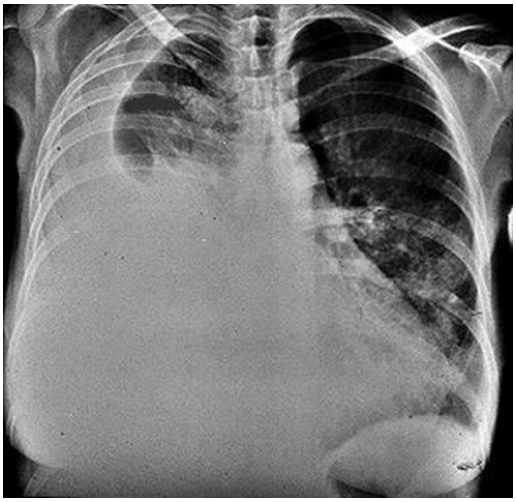
1. *What is the diagnosis?*
2. *Causes?*
3. *Causes of Irone deficiency?*
4. *Definition of anemia?*
5. *What investigations you would request for?*
6. *Rx?*
7. *Iron metabolism?*

Key:

1. *Microcytic anemia*
2. *Iron deficiency, Thalassemia, sidroblastic anemia*
3. *Decrease intake, increased loss, increased requirement*
4. *ANEMIA: Hb <13 in males & <11 in females or Ht <40 in males & <37 in females*
5. *DIAGNOSIS: Hb low, MCV <67, Microcytic picture, Serum iron low, TIBC Inc., Serum Ferritin <12 mcg/l (Serum ferritin is the most useful screening & Sensitive test for iron deficiency. Values < 12µg/L is diagnostic of iron deficiency. Although normal values do not rule out, values > 100 µg/L make iron deficiency unlikely.*
6. *Rx: Oral ferrous sulphate 325 mg TDS, iron dextran I/M, I/V, Ferrous Gluconate (Ferrous sulphate has more iron content than parenteral forms but parenteral forms are used when patient is intolerant to oral iron).*
7. *Fe metabolism: 4 g in body (2500 in RBC, 500 in liver, 500 in muscles, 500 in bones)→ 4 mg in circulation → 6mg/1000 kcal in diet → 15% is bioavailable → 1mg in lost via Gut*

QUESTION:

This 25 years old gentleman presented with fever, cough expectoration of sputum, loss of weight and progressive dyspnea for 2 months.



1. *Write 2 findings in this CXR?*

2. *What is the most likely diagnosis?*
3. *Enlist 2 most helpful diagnostic investigations?*
4. *Treatment*

Key:

1. *Diagnosis*
   a. *Massive right sided pleural effusion with Mediastinal shift towards left*
   b. *Left basal infiltrates*
2. *Massive pleural effusion right with left basal infiltrates most likely due to tuberculosis.*
3. *Investigation*
   a. *Pleural fluid R/E*
   b. *PCR for DNA of mycobacterium tuberculosis in pleural fluid*
   c. *Pleural biopsy*
   d. *Mantoux test.*
4. *Treatment*
   a. *Standard 4 drug ATT for 6 months with or without corticosteroids*

QUESTION:

This is a pleural fluid analysis report of a 20 years old male who presented with history of high grade fever and pain in left side of chest for one week.

Color = Turbid
Proteins = 5.1 gm/dl
TLC = 100,000 per cub mm
Polys = 95 %
Lymphos = 5 %
Glucose = 3mmol/dl
PH = 7.1

What is the most likely diagnosis?
What treatment options you will consider ?

Key:
Empyema thoracis
I/V antibiotics for 4-6 weeks
Chest intubation
Open drainage if required

QUESTION:

This is an X Ray chest of 35 years old lady who presented with cough, low grade fever and decreased appetite for last 3 months.

a) What is the abnormality on X Ray Chest?
b) Enlist three further investigations?
c) How will you differentiate between exudate and transudate?
d) How will you treat her?

Key

(a) Homogenous opacity left lower lung zone with upward concave border → Pleural Effusion

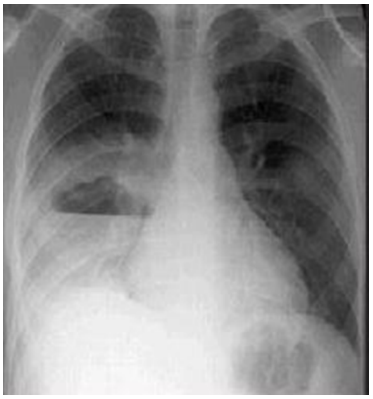
(b) CXR → Pleural Tap → USG chest ➔ Pleural biopsy with Abram's needle when Pleural tap is non-diagnostic

(c) Protein < 25 g/l is transudate e.g. in CCF, Liver failure, Nephrotic syndrome, Hypothyroidism, Meig's syndrome ➔ Protein > 35 g/l is exudate e.g. in infections, inflammations, malignancy ➔ Protein 25-35 g/l do light's criteria with Pleural fluid Protein : Serum Protein ratio > 0.5 is exudate ➔ Empyema is protein ratio >0.5, LDH ratio >0.6, PH<7.2, Glucose <3.3

(d) Antibiotics + Analgesics + Antitussives + Antipyretics ➔ Pleural drainage when indicated in Failure of medical therapy & Empyema → Medical Pleurodesis with talc, Bleomycin or Tetracycline → surgical Pleurodesis when indicated in Failure of medical therapy, recurrent effusions, pleural thickness

QUESTION:

This 30 years old gentleman has history of fever, cough and hemoptysis for the last 2 weeks. He has history of significant weight loss. Clinically he is pale and clubbed.



1. *Describe two positive findings in the given Chest X-ray?*
2. *What is the diagnosis?*
3. *Mention two steps in management of this case?*

Key:

1. *Findings*
   a. *Thick Wall Cavity*
   b. *Air fluid level*
2. *Right Lung Abscess*
3. *Treatment*
   a. *I/V antibiotics for 4 – 6 weeks*
   b. *May need bronchoscopic aspiration*

QUESTION:

This young gentleman presented with sudden onset of left sided chest pain and severe shortness of breath while bicycling. Clinically he is cyanosed.

1. *Write two major positive findings in the X-Ray chest film?*
2. *What is the diagnosis?*
3. *What emergency treatment would you institute in the management of this patient?*

Key:

1. *Findings*
    a. *Large pneuthorax left*
    b. *Shift of mediastianum towards right*
2. *Tension pneuthorax lef*
3. *Insertion of wide bore canula into left pleural cavity at second intercostal space.*

QUESTION:

A 50 years old gentleman presents with 2 months history of progressive dyspnea and palpitation.

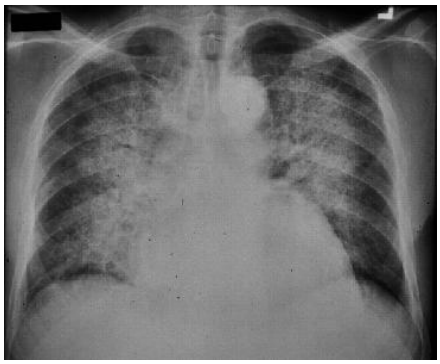
1. *What is shown in his CXR?*
2. *Write four causes of this abnormality*
3. *Name two further investigations which are helpful in confirming the diagnosis?*

Key:

1. *Findings*
    a. *Cardiomegaly*
    b. *Pericardial effusion*
2. *Causes*
    a. *Uncontrolled HT*
    c. *IHD*
    d. *VHD*
    e. *CMP*
3. *Investigations*
    a. *ECG*
    b. *Echo*

QUESTION:

This 50 years old gentleman presented with two months history of progressive Dyspnea.



a) Write two most important findings in this chest X-ray?
b) Enlist three most important drugs to used in the management of this patient?

QUESTION:

1. *Explain the x ray?*
2. *What is your diagnosis on this x- ray?*
3. *How will you treat this patient?*
4. *Classes of drugs used?*
5. *Side effects of drugs?*
6. *Duration of treatment?*
7. *What is MDR?*
8. *Rx MDR?*
9. *XDR?*
10. *Write 3 complications this patient can develop from this disease?*

Key:

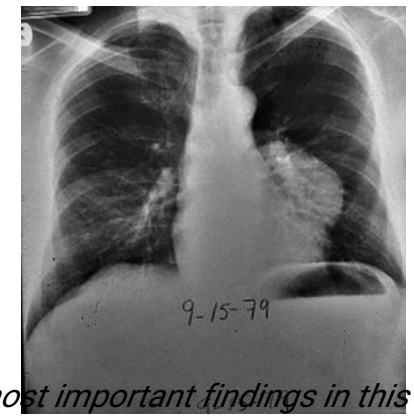
1. *Diffuse non homogenous opacities distributed throughout both lung fields.*
2. *Pulmonary tuberculosis*
3. *4 drug combination of ATTT like INH ,Rifampicine ,Myambutol and pyrizinamide for 2 months followed by 2 drugs INH and Rifampicine x 4months*
4. *First line (INH, Rifampacin, PZA, Ethambutol), 2nd line agents (PASA, Ofloxacin, ciprofloxacin, cycloserine, amikacin, kanamycin, capreomycin, Azithromycin)*
5. *INH (Hepatitis, Peripheral neuropathy use B6), Rifampacin (hepatitis, Orange discoloration), PZA (Gout), Ethambutol (Optic neuritis, color vision loss),*

streptomycin (ototoxic and nephrotoxic) ➔ Avoid Aminoglycosides & PZA in pregnancy ➔ Avoid Aminoglycosides & Ethambutol in renal failure ➔ SHE regimen in liver failure ➔ Rifabutin for Rifampicin in HIV

6. *6 months for pulmonary, 9 months for extra pulmonary, 12 months for Genitourinary, 18 months for pott's disease & Tuberculoma, 24 months for MDR-Tb*
7. *Mycobacterium resistant to INH & Rifampacin.*
8. *3 drugs (Ethionamide, cycloserine, PASA, Ofloxacin) + 1 drug (amikacin, kanamycin, capreomycin) or Amikacin 750 mg + Levofloxacin 750 mg + PZA + Ethionamide + Cycloserine for 8 months followed by 12 months of Levofloxacin + Ethionamide + Cycloserine*
9. *Mycobacterium resistant to INH, Rifampicin, Aminoglycosides, Levofloxacin*
10. *Pulmonary fibrosis , lung abscess, Cavitation, Aspergilloma, Pleural effusion, Tubeculoma in eyes, meningoencephalitis, Potts, disease, hematuria, Hemoptysis etc*

QUESTION:

A 50 years old chronic smoker presented with worsening of his cough, expectoration and shortness of breath for 6 months and massive hemoptysis for 1 day.



1. *Describe the most important findings in this CXR?*
2. *What is the most likely diagnosis?*
3. *Enlist 3 further investigations which would be helpful in the final diagnosis?*
4. *Risk factors?*
5. *Types of tumors?*
6. *What are Para neoplastic syndromes?*
7. *Treatment options?*
8. *Contraindications of surgery?*

Key:

1. *Homogenous left hilar opacity*
2. *CA bronchus*

3. *Investigations*
    a. *CT Scan chest with contrast*
    b. *Bronchoscopy / Biopsy*
    c. *Sputum cytology*
4. *Smoking, Asbestos, Chromium, Arsenic, Radon gas*
5. *Squamous (30%), Adenocarcinoma (30%), small cell, large cell, alveolar cell.*
6. *Para neoplastic syndromes (small cell lung cancer produces ACTH, ADH, GH, HPOA, squamous cell lung cancer produces PTHrP)*
7. *Treatment options include surgery for Peripheral tumors without spread, other option is radiotherapy.*
8. *Contraindication of surgery are FEV1 <1.5L, Vocal cord paralysis, SCV obstruction, Stage 3 or 4 disease ➔ perform radiotherapy*

QUESTION:

25 years old gentleman presented with fever, cough, haemoptysis and pleuritic chest pain for one month. His X Ray chest was obtained.

a) *Write three findings in this X Ray Chest?*
b) *What is the diagnosis?*
c) *Enlist two further investigations?*

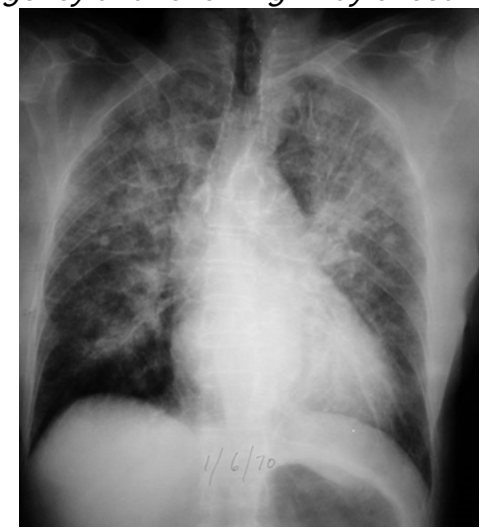
QUESTION:

A 30 years old man presented with palpitations and exertional dyspnea for last 6 months. For last one month he is also having fever upto 102F. Two days prior to admission patient had an episode of haematuria. His chest X Ray was obtained.

1. *Enlist 2 abnormalities on X ray chest?*
2. *What is diagnosis on x ray?*
3. *What is the most likely cause for his fever?*

QUESTION:

50 year old man presented with sudden onset of shortness of breath for last half an hour. He was seen in emergency and following X ray chest was obtained.



1. *What is the diagnosis?*
2. *Write three precipitating factors?*
3. *How will you treat him?*

QUESTION:

64 years old gentleman presented with unconscious state. He was hypertensive for 20 years with irregular treatment and poor control of Blood pressure. His blood pressure was 240/130 mmHg. His brain CT was obtained.

1. *Describe the CT scan findings?*
2. *What is the diagnosis?*
3. *Write 3 management steps.*

Key:

1. *Hypo dense opacity in left parietal-occipital regions with surrounding edema and mass effect but without any midline shift.*
2. *Intercerebral bleed*
3. *ABC, Mannitol, Neurosurgical evacuation*

QUESTION:

a) What abnormality is seen in this x-ray? (01)
b) What disease this gentleman is likely to have? (01)
c) Suggest three more useful diagnostic investigations (03)

Key:

a) Lytic lesions in the skull
b) Multiple myloma
c) CBC ESR, Serum Protein electrophoresis, Bone marrow aspiration and trephine

QUESTION:

This 70 years old gentleman presented with decreased attention, apathy and loss of memory for three months. He also had unsteady gate and incontinence of urine.

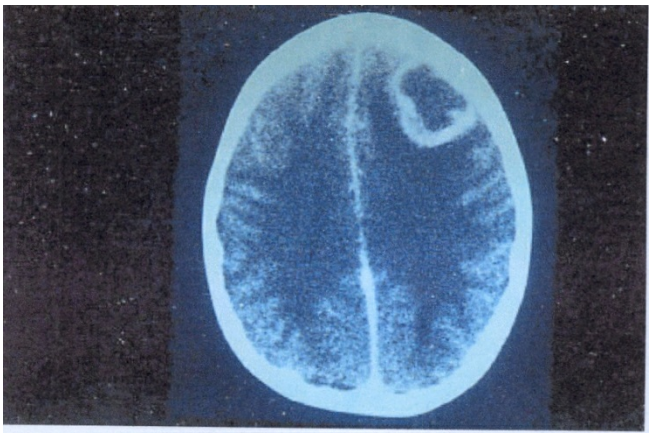
1. *What investigation is shown?*
2. *What abnormality is present?*
3. *What is the diagnosis?*
4. *What is the most effective treatment?*

Key:

1. *CT scan Head without contrast.*
2. *Enlarged lateral ventricles without cerebral atrophy*
3. *Normal Pressure Hydrocephalus (NPH)*
4. *Ventricular Shunting*

QUESTION:

This 30 years old patient has presented with history of fever, headache and vomiting for Seven days.
He has history of chronic sinusitis and has been under treatment of ENT Specialist with poor response.



1. *What investigation is shown?*
2. *What is the abnormal finding?*
3. *Write down three steps of management?*

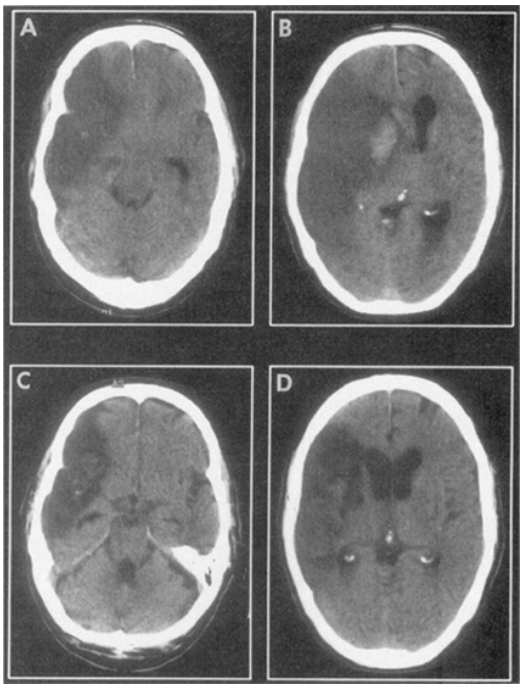
Key:

1. *CT scan Brain with contrast*
2. *Brain abscess Left Cerebrum*
3. *Treatment*

a. *I/V antibiotics for 6- 8 weeks Cephalosporin*
b. *Antiepileptic drugs*
c. *Injection Mannitol*
d. *Surgical Evacuation*
e. *Treatment of sinusitis*

QUESTION:

64 year old lady presented with weakness of left side of the body and drowsiness. Her CT brain was obtained.



1. *What is the diagnosis on CT Brain?*
2. *What four risk factors you will look for in this patient.*

QUESTION:

An 80 years old gentleman was brought to hospital in unconscious state. He tripped at

home while walking and remained alright for 2 days. His CT scan brain without contrast is shown:

1. *Explain CT scan?*
2. *What is diagnosis?*
3. *Underlying pathology?*
4. *What are the Causes of this condition?*
5. *Write 3 most important management steps?*

Key:

1. *Crescent of sickle shaped Hypo density on left temporoparietal region of brain.*
2. *SDH (Subdural hematoma), Bilateral or SDH (Subdural hematoma), Left*
3. *Bleeding from bridging veins between cortex and Dural sinuses*
4. *Acute SDH (Trauma), Chronic SDH (Spontaneous or on anticoagulants, elderly alcoholics or epileptics)*
5. *Management*
   a. *ABC / Care of unconscious patient*
   b. *Injection Mannitol*
   c. *Neurosurgical consultation for drainage of hematoma left*

QUESTION:

A 22 years man is brought into emergency in an unconscious state with irregular pupils. He fell from motorcycle 2 days ago but was alright at that time. CT scan done is show.

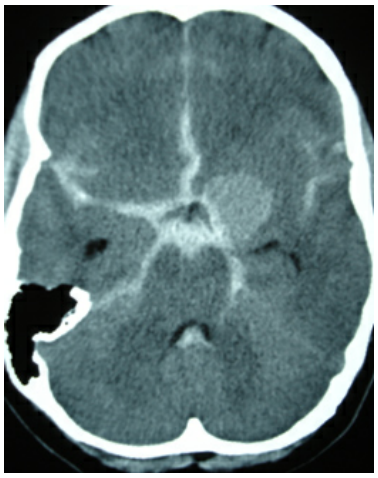
1. *Explain CT scan?*
2. *What is diagnosis?*
3. *Underlying pathology?*
4. *What are the Causes of this condition?*
5. *Write 3 most important management steps?*

Key:

1. *Biconvex or lens shaped Hypo density in left temporoparietal region with midline shift to right.*
2. *Extradural hematoma.*
3. *Bleeding or rupture of middle meningeal artery & Vein.*
4. *Trauma followed by lucid interval of a few days and then unconsciousness due to expansion of bleed with irregular pupils with brain herniation, depressed respiration.*
6. *Management*
    d. *ABC / Care of unconscious patient*
    e. *Injection Mannitol*
    f. *Neurosurgical consultation for drainage of hematoma left*

QUESTION:

A 30 years lady presents to the emergency with severe occipital headache since one day. She has no previous history of headaches, falls. She has family history of Stroke and kidney diseases. CT scan preformed is shown.



1. *Explain CT scan?*
2. *What is diagnosis?*
3. *Underlying pathology?*
4. *What are the Causes of this condition?*
5. *If CT is non-conclusive / Normal, what should be the next investigation?*
6. *Write 3 most important management steps?*

Key:

1. *Hypo dense streaks in the intercerebral fissures*
2. *SAH*
3. *Bleeding from circle of villus or berry aneurysms.*
4. *AV malformations, Berry aneurysms (80%), Connective tissue diseases, PCKD*
5. *Perform lumbar puncture > 12 hours post headache to see xanthochromia*
6. *Management*
    a. *Admission to ITC*
    b. *Vitals monitoring*
    c. *Anti-hypertensive if raised BP*
    d. *Analgesia or sedation for pain*
    e. *Nimodipine 60 mg 4 hourly for vasospasm*
    f. *Surgical clipping of aneurysms*

QUESTION:

This 35 years old gentleman is complaining of severe headache and diplopia for the last one day.

1. *Write two positive findings in this picture?*
2. *What is the diagnosis?*
3. *What is the possible cause of this lesion?*

Key:

1. *Findings*
   a. *Dilated pupil (R)*
   b. *Strabismus towards (R) eye (R)*
2. *Diagosis*
   a. *Third Cranial Nerve palsy (R)*
3. *Aneurysm of right posterior communicating artery*

QUESTION:

A 45 years old man presented with cough for 3 month with hemoptysis off and on. Now for 6 day patient was having head ache, vomiting and diplopia. His CSF examination revealed of 650 x 10^6/l cells, 90% lymphocytes. Proteins were 1.68 gm/l CSF glucose was 2.3 mmol/L, Blood glucose simultaneously obtained was 6.8 mmol/L

1. *What is the most likely diagnosis?*
2. *How will you treat him?*
3. *What is the cause of Diplopia?*

Key:

1. *Tuberuculous Meningitis*
2. *ATT for 12 months with steroids for first 2 months*
3. *Involvement of 6 Nerve in basal meningitis*

QUESTION:

A 65 years old man has been admitted in medical ward with history of gradually increasing difficulty in walking and stiffness in legs of 4 months duration. He has also noticed some weakness in upper limbs since last 1 month. There is no history of abnormal sensory symptoms. He does not give history of deterioration in higher mental functions, painful neck movements and trauma to spine.
Clinical examination reveals normal vital signs. BP160/102 mmHg. No other abnormality is noted in general physical and systemic examination. Cervical spine examination shows normal movements and the other spinal segments show no

abnormal signs.
Motor system examination in upper limbs shows, flat thenar eminence of both hands, loss of muscle mass, decreased tone, power -4/5 and decreased biceps, triceps and radial jerks.
Motor system examination in lower limbs shows normal muscle mass, increased tone, power 3/5 proximal and distal muscles and increased deep tendon reflexes. Planters equivocal BIL. No abnormality detected in sensory system examination.

1. *What is the diagnosis?*
2. *What is the differential diagnosis?*
3. *Types?*
4. *Pathogenesis?*
5. *Investigations?*
6. *Prognosis?*
7. *Treatment?*

Key:

1. *Motor neuron disease (Amyotrophic lateral sclerosis) ➔ No sensory signs differentiates from MS ➔ No extra ocular involvement differentiates from MG.*
2. *Differential diagnosis.*
   a. *Marked cervical stenosis and compression of cord.*
   b. *SOL cervical spine.*
   c. *Sub-acute degeneration of cord due to pernicious anemia.*
3. *Types*
   a. *ALS (50%)*
   b. *Bulbar (25%) ➔ Worst prognosis*
   c. *Progressive muscle atrophy (25%) ➔ Better prognosis*
4. *AD ➔ SOD mutations ➔ UMN + LMN signs*
5. *Investigations.*
   a. *X−Ray cervical spine AP and lateral view.*
   b. *MRI cervical spine with contrast. ➔ rules out MS*
   c. *NCS and EMG. ➔ rules out polyneuropathies*
   d. *Lumbar puncture ➔ rules out inflammatory conditions*
   e. *Serum Vit B12 level.*
6. *Prognosis is usually poor*
7. *Treatment (Multidisciplinary)*
   a. *Riluzole improves survival by 3 months ➔ sodium channel blocker inhibiting Glutamate release*
   b. *Home NIPPV improves survival by 7 months*
   c. *Spasticity ➔ Anti spasmodic*
   d. *Feeding tube for dysphagia*

QUESTION:

A 50 years old female school teacher is admitted to your ward with history of pain in

joints, difficulty in climbing stairs and bluish discoloration of fingers of both hands on coming in contact with cold objects especially in winter season.
Clinical examination reveals signs of proximal myopathy in shoulder and hip girdles, with thickening of the skin of the fingers and toes, more marked distally. There are capillary loops in the nail folds.

1. *What is the diagnosis?*
2. *Types?*
3. *Diagnostic criteria?*
4. *What are the preferred investigations needed for confirming the diagnosis?*
5. *Complications?*
6. *Treatment?*

Key:

1. *Systemic sclerosis (CREST Syndrome)*
2. *Types*
   a. *Localized CREST*
   b. *Diffuse*
3. *Diagnostic criteria*
   a. *Major*
   b. *Minor*
4. *Investigations*
   a. *Blood CP with ESR.*
   b. *Anti SCL 70 antibodies. (35%) in diffuse disease*
   c. *ANA Ab (90%)*
   d. *Anti-Centromere Ab (50%) especially in CREST syndrome.*
   e. *X- Ray hands for joint involvement and for CALCINOSIS.*
   f. *Serum CPK*
   g. *Serum urea and electrolytes.*
   h. *Skin biopsy*
5. *Complications*
   a. *Pulmonary complications like pulmonary Hypertension*
   b. *Cardiac complications like corpulmonale*
   c. *Renal complications like Malignant Hypertension and Flash pulmonary edema*
   d. *GIT complications like Dysphagia*
6. *Treatment*
   a. *Pulmonary Hypertension ➔ NO challenge test ➔ calcium channel blockers & Endothelin receptor antagonists*
   b. *Cardiac complications ➔ Diuretics + Oxygen*
   c. *Renal complications ➔ ACE inhibitors for malignant hypertension*
   d. *GIT complications ➔*
   e. *Skin complications ➔ HCQ*
   f. *Joint complications ➔ Cyclophosphamide*

QUESTION:

This patient presented to hospital with history of dysphagia and had aspiration pneumonia. She also gives history of bluish discoloration of hands off and on.

1. *What is the diagnosis?*
2. *Name four systemic complications of this disease*
3. *Name two diagnostic investigations?*

Answer Key:

1. *Systemic sclerosis / scleroderma*
2. *Complications*
   a. *Pulmonary fibrosis*
   b. *Cardiac complications*
   c. *Renal complications*
   d. *GI complications*
3. *Investigation*
   a. *ANF*
   b. *Anti SCL – 70*
   c. *Anti-centromere antibody*

QUESTION:

A 45 years old house wife reports to your clinic for low grade fever, painful joints of hands and elbows for the last 05 months. The pain is worse in morning and relieves off after 45 minutes to 1 hour.

Clinical examination reveals Temp 99.4Fo with symmetrical swelling and limitation of movements of the small joints of hands (BIL). Systemic examination reveals 3 cm splenomegaly.

1. *What is the diagnosis?*

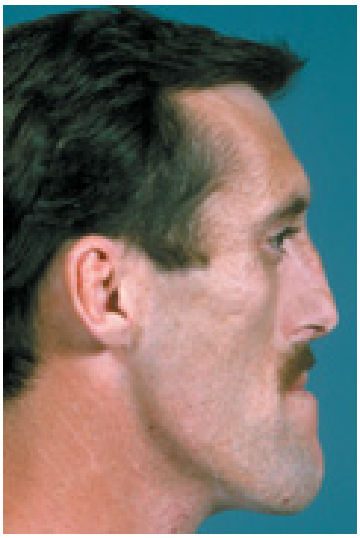
2. *What are the investigations would you order in priority*
3. *Diagnostic criteria?*
4. *Treatment?*

Key:

1. *RA (FELTY'S SYNDROME)*
2. *INVESTIGATIONS*
   a. *Blood CP with ESR, MP: ESR Increase, TLC Increase/Decrease, Leukopenia (In Felly's syndrome), Lymphopenia, Anemia (Normochromic Normocytic), N0 MP seen.*
   b. *Anti-Cyclic citrullinated peptide antibodies in 70-80 %.*
   c. *RA factor in 70-80%.*
   d. *ANA (30-60%)*
   e. *X Ray of hands.*
   f. *U/S abdomen to rule out liver disease.*
   g. *Blood Culture.*
3. *Diagnostic criteria 4/7 required*
   a. *Morning stiffness > 1 hour*
   b. *Symmetrical involvement*
   c. *Small joint involvement*
   d. *Hand involvement*
   e. *Nodules*
   f. *Factor*
   g. *Radiological signs ➔ LOSS*
4. *Treatment*
   a. *Corticosteroids used for Flare*
   b. *MTX (2.5mg 3 tablets weekly) with or without Leflunomide (20 mg daily for 3 days than 10 mg daily??)*
   c. *Analgesics*

QUESTION:

This 40 years old gentleman is complain of frequent headaches and sticking of food in his mouth while chewing.



1. *What is the diagnosis?*
2. *What physical signs are visible in this picture?*
3. *Name four important investigations for its diagnosis?*
4. *Treatment?*

Key:

1. *Acromolagy*
2. *Signs*
   a. *Proganthism*
   b. *Frontal bossing*
3. *Investigations*
   a. *IGF 1 for screening*
   b. *OGTT for diagnosis*
   c. *GH levels*
   d. *X ray skull lateral view*
   e. *CT / MRI Brain*
4. *Treatment*
   a. *Trans sphenoidal sugery*
   b. *Bromocriptine*
   c. *Somatostatin analogues*
   d. *Octreotide*
   e. *Pegvismont*

QUESTION:

This 30 years old lady has history of weight loss, despite good appetite and has fine tremors of hands.

1. *What is the diagnosis?*
2. *What two signs are visible?*
3. *Name two drugs used in its treatment?*

Key:

1. *Thyrotoxicosis (Grave's disease)*
2. *Goiter & Exophthalmos*
3. *Beta blockers e.g. propranolol for symptomatic improvement & Thyroid hormone synthesis inhibitors like Carbimazole & Methimazole*

QUESTION:

This 25 years old lady presented with 2 months history of fever and joint pains. Hb 10, TLC 3900, Platelets 40x10^{9}, ESR 100. Urine R/E proteins +++.

=

What abnormality is shown and what is the diagnosis?
Diagnostic criteria?
Causative drugs?
Write two diagnostic investigations?

Name two drugs which can be used for the treatment of this patient?
Monitoring?

QUESTION:

This 34 years old lady presents with a nine month history of weight gain, weakness and amenorrhea. Examination reveals the appearance as shown, a BP of 180/110 and proximal myopathy. Urine R/E shows ++ Glucose and pregnancy test is negative.

1. *What sign is shown in this picture and what is the diagnosis?*
2. *Other signs?*
3. *Causes?*
4. *Name three most important diagnostic tests?*
5. *Treatment?*

Key:

1. *Moon face – Cushing's syndrome or Cushing disease*
2. *Other signs*
3. *Commonest cause*
4. *Test*
    a. *24 hours urinary free cortisol*
    b. *Overnight dexamethasone suppression test*
    c. *Low dose dexamethasone suppression test*
    d. *High dose dexamethasone suppression test*
    e. *ACTH*
5. *Treatment*

QUESTION:

a) What is your diagnosis? (1)
b) Name three clinical subtypes. (3)
c) Enumerate two common nail changes. (1)

Answer Key:

a) Psoriasis

a) Chronic plaque psoriasis, guttate psoriasis, pustular psoriasis, psoriatic erythroderma.

c) Subungual hyperkeratosis, onycholysis, pitting, splinter haemorrhages, nail thickening.

QUESTION:

a) What is your diagnosis? (02)
b) Which is the nerve supplying the area and mention its branches? (02)
c) Name the etiological agent causing this disease and mention the name of other disease which can be caused by this

organism. *(01)*

Key:

a) Herpes zoster.
b) Trigeminal nerve, Opthalmic and Maxillary divisions.
c) Chicken pox.

QUESTION:

This is a photograph of a 50 years old man who presented with lethargy and weakness for 6 months

a) What is the most likely diagnosis?
b) Write one single most useful investigation
c) How will you treat this patient? And for how long

Key:
a) Hypothyroidism
b) Serum TSH levels
c) Thyroxin
Life long

QUESTION:

a) What is your diagnosis on this picture?
b) Write two abnormalities.
c) Write 2 drugs which can be helpful on log term basis

QUESTION:

This 50 years old gentleman got up in the morning and complained of dribbling of saliva from the angle of mouth.

a) What is the diagnosis? (1)
b) What is the most likely site of lesion? (1)
c) Enlist three treatment options? (3)

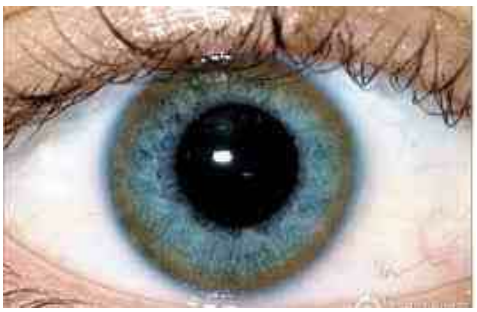
Key:
a) Bell's Palsy / Left 7th Caranial nerve palsy lower motor neuron type

b) Entrapment in Facial canal
Paratid tumor (Any two)
Left sided brain stem infarct

c) Physiotherapy
Steroids (Any two)
Acyelovir

QUESTION:

Look @ the picture

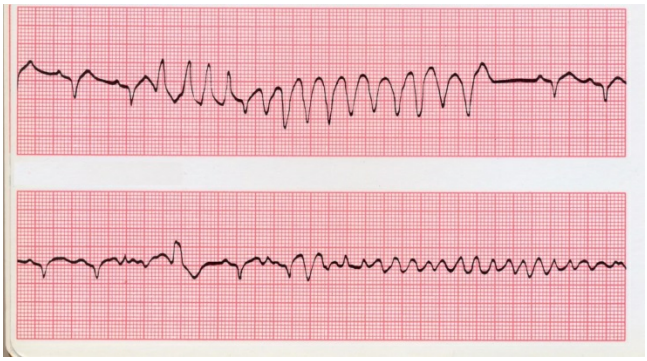


1. *What is it?*
2. *What other signs in eye?*
3. *What is the diagnosis?*
4. *What is pathogenesis & S/S?*
5. *How will you investigate?*
6. *How will you treat?*

Key:

1. *KF rings*
2. *Anemia, Jaundice, cataract*
3. *Wilson's disease or hepatolenticular degeneration*
4. *AR disorder Deficiency of ATP7B on chromosome 6 resulting in cu accumulation in liver, eye, basal ganglia of brain, kidneys*
5. *Serum cu and ceruloplasmin levels, 24 hour urinary cu levels, MRI Brain, Liver biopsy and histology*
6. *Penicillamine, Trientene, Zn phosphate, tetrathiomolibdate.*

QUESTION:



1. *Identify the ECG rhythm.*
2. *What immediate step you will take?*
3. *What may be the underlying disease?*

Key:

1. *Ventricular fibrillation*
2. *DC cardio version*
3. *Ischemic heart disease possibly myocardial infection*

QUESTION:

1. *What is your diagnosis?*
2. *Name the group of organisms which cause this infection.*
3. *Name 02 drugs which may be used to treat this disease.*

QUESTION:

1. *What is your diagnosis?*
2. *What are the two main clinical types of the disease?*
3. *Which age group is affected by the disease?*

QUESTION:

A 22 years shopkeeper is admitted to your ward with history of high grade fever of 12 days duration. While he was being investigated in ward, he collapsed.
Later in the night patient passed red colored stools with clots.
His BP dropped to 74 mmHg systolic and pulse was 144/m, low volume. He had cold clammy extremities and had drenching sweats. Temp 99F. Abdominal exam reveals 2 cm soft splenomegaly.

1. *What is the most likely diagnosis?*
   a. *Enteric fever with Peyer's patches ulceration.*
   b. *PUO with upper GI bleed due to acute gastric erosions.*

   c. *PUO with NSAIDS induced ulcerations.*
   d. *Viral hemorrhagic fevers (Dengue shock syndrome Or Congo Crimean hemorrhagic fever).*
   e. *Diverticulitis with bleeding.*
2. *Organism, route & incubation?*
3. *s/s?*
4. *Diagnosis?*
5. *Rx?*
6. *Complications?*
7. *Rx Carrier?*
8. *Interpret widal?*

Key:

1. *Enteric fever*
2. *Salmonella typhi, Salmonella paratyphoid A,B,C ➔ Fec o oral route ➔ 3-21 days*
3. *High grade step ladder Fever with bradycardia (1week), salmon rash & splenomegaly (2 week), complications (3 week)*
4. *Blood cp (anemia 2 Git bleeding, Lymphopenia & thrombocytopenia), Blood culture (10 days), Urine/stool culture (2 weeks), Bone marrow culture (3 week onwards with highest yield), serum widal, Typhidot*
5. *Ciprofloxacin 500 mg BID for 7 days or Cipro / Cefotaxim i/v for 10-14 days in severe cases*
6. *GIT (perforation, hemorrhage, cholecystitis), hematogenous (sepsis), myocarditis, osteomyelitis, CNS*
7. *Ciprofloxacin 500mg for 6 weeks or Ampicillin + probenecid ➔ cholecystectomy*
8. *H antigen (chronic carrier or immunization), O antigen (acute infection), v antigen (acute infection)*

QUESTION:

A 25 years old school teacher reports to your hospital with history of fever of continuous nature since last 18 days. She also complaints of palpitation and breathlessness since last 3 days. Breathlessness has rapidly increased and now she cannot walk for even couple of steps. She has taken some unknown medications without any benefit.
Clinical exam shows toxicity, temp 102 F, pulse 115/m, Jaundice +,
Cardiac Exam -S3 gallop. Abdominal Exam - soft 2 cms splenomegaly. Resp. Examination reveals fine basal crackles.
Laboratory exam reveals:
Blood CP: TLC 3.0 109/l with mild lymphocytosis.
CXR – Cardiomegaly with pulmonary congestion.
ECG – Sinus tachycardia with widespread T wave inversions and mild ST segment sagging.
Echocardiogram – Mildly dilated LV and LA and no evidence of bacterial endocarditis.
Blood and urine culture – No growth

1. *What is the likely cause?*
    a. *Enteric fever with myocarditis and left heart failure.*
    b. *b). Viral fever with viral myocarditis.*
    c. *c). Leigionaires disease with myocarditis*
    d. *d). MT malaria with myocarditis*
    e. *e). Typhus fever with myocarditis*
2. *Organism, route & incubation?*
3. *s/s?*
4. *Diagnosis?*
5. *Rx?*
6. *Complications?*
7. *Rx Carrier?*
8. *Interpret widal?*

Key:
Same as above for Typhoid
ANS : a)

QUESTION:

A 42 years old sports instructor develops high grade fever, conjunctival injection, jaundice and poor urinary out put since last 5 days. He has been gone for swimming competition in Rawal dam during last rains about 2 weeks ago.
Clinical examination reveals:
BP 90/60 mmHg, pulse 120/ m, low volume with signs of dehydration. Marked conjunctival injection, skin showing ecchymotic patches on arms and trunk, 2cms hepatomegaly and marked tachycardia without added sounds.
Lab investigations reveal:
TLC 23x109 /l , serum urea 9 m mol / l, serum bilirubin 55 micro mol / l, ALT 122 U/l, urine R/E showing proteins 2+, RBC and tubular casts and ECG showing sinus tachycardia.

1. *What is the probable diagnosis?*
    a. *Enteric fever*
    b. *Malignant tertian Malaria*
    c. *Leptospirosis (Weil's disease)*
    d. *Scrub typhus fever*
    e. *Dengue fever*
2. *Organism, route & incubation?*
3. *s/s?*
4. *Diagnosis?*
5. *Rx?*
6. *Complications?*
7. *Rx Carrier?*

Key:

1. *Leptospirosis (Weils disease)*
2. *Leptospira interogans ➔ water infected with mice urine during swimming*
3. *Red conjunctive, Fever, GIT (Jaundice & Hepatomegaly), Respiratory (Hemoptysis), Blood (purpura, DIC), Renal (Oliguric renal failure)*
4. *Microscopic agglutination test, Serological test*
5. *Doxycycline 100 mg BID for 7 days or Benzyl penicillin for 600mg/ 6 hourly for 7days*
6. *ARDS, DIC, Renal failure, MOD*
7. *Doxycycline 200 mg/week PO*

QUESTION:

A 33 years old goat farm worker reports to you for low grade fever for the last 4 weeks with marked pain in lower back, hips and legs. He also complaints of marked fatigability and night sweats. Since last one week his left knee has become painful and swollen. Clinical examination reveals Temp 100F, pulse 112/m, No skin rashes, cervical lymphadenopathy+, Liver 2 cms and spleen 3 cms enlarged, swollen and acutely tender left knee with marked limitation of movements.
Lab investigations reveal:
TLC 4x109/ l, HB 9 gm/dl with normochromic, normocytic picture, platelet count 85x109/ l, Serum ALT 69 U/dl.

1. *What is the diagnosis?*
   a. *Disseminated tuberculosis*
   b. *Enteric fever*
   c. *Septic arthritis*
   d. *Brucellosis.*
   e. *Toxoplasmosis etc, etc.*
2. *Organism, route & incubation?*
3. *s/s?*
4. *Diagnosis?*
5. *Rx?*
6. *Complications?*

Key:

1. *Brucellosis*
2. *Brucella Abortus, melitensis, suis, canis ➔ contact with placenta ➔*
3. *Fever, Night sweats, Weight loss, Arthralgias, Myalgias, Hepatosplenomgaly, Lymphadenopathy, CNS (Neuromyelitis), Resp (Pelural effusion), Bone (Osteomyelitis, arthritis), GIT (Hepatosplenomegaly), Eye, Heart (IE)*
4. *Blood culture (6 weeks), Elisa, immunoradiometric assays*
5. *Doxycycline 100 mg BID for 6 weeks*
6. *Complications as above*

QUESTION:

A 22 years young girl was admitted last night in med ward with history of sudden onset of weakness of Rt lower limb of 2 days duration. She has been having low grade fever since last 4 weeks.
Clinical examination reveals apprehensive young lady and examination of precardium revealed loud 1st heart sound and rumbling diastolic murmur at apex with irregular rhythm.
Neurological exam revealed power in Rt upper limb 5/5 proximally and distally and Rt lower limb 3/5. Deep tendon reflexes 2+ in Rt upper limb and 3+ in Rt lower limb. Planters Rt equivocal and Lt down going.

1. *What is the most likely diagnosis?*
    a. *Cerebral hemorrhage.*
    b. *Tuberculoma brain.*
    c. *Cerebral thromboembolism from Lt Atrium.*
    d. *CNS infection with cortical thrombophelibitis.*
    e. *Left Atrial myxoma with thromboembolism.*
2. *Investigations?*
3. *Rx?*
4. *Risk factors?*
5. *Causes?*
6. *Aspirin in AF & Post TIA?*

Key:

1. *TE from Left Atrium*
2. *ECG, ECHO, Carotid Doppler, CT/MRI Brain, LP, Blood CP, Thrombophilia screen, BSR*
3. *Emergency treatment (airway management, O2 to maintain saturation, Hydration to control Pulse & BP, Temp maintenance, Glucose control, General nursing care for sores) & Specific treatment like Ischemic (Aspirin, ACE Inhibitors / Anti HTN (15% reduction in first 24 hours), Anti lipidemics, Diet & Nutrition through NG or Parenteral if required, DVT prophylaxis with Heparin, Endarterectomy if >70% stenosis, Food and nutrition through NG or parenteral If required, Care of ulcers & infections, Thrombolysis with Alteplase in 3 hours), Hemorrhagic (Antiplatelet drugs, Anti HTN, Diet & Nutrition through NG or Parenteral if required, DVT prophylaxis with Heparin, Care of ulcers & infections, Surgical treatment if indicated)*
4. *Risk factors are alcohol, smoking, BP, CVS and Cholesterol, DM, Estrogen pills & Thrombophilia states*
5. *Causes are thromboembolism (carotid thromboembolism, AF, Valvular heart disease, Atrial myxoma, IE, MI, Thrombophilia states in young's) & Hemorrhagic (Alcohol, Amyloid angiopathy, Berry aneurysm, BP, Connective tissue diseases, capillary malformations)*
6. *Post AF Stroke assess using CHADS 2 scoring system (Coronary heart disease (1), HTN (1), Age > 75 (1), DM (1), Stroke / TIA (2) ➔ 1 with aspirin, 2 with either aspirin or warfarin, 3 with warfarin) ➔ Post TIA assess using ABCD 2 scoring*

*system (Age > 60 (1), BP (1), Clinical Hemiparesis (2) or Clinical Dysarthria (1), Duration 60 min (2), Duration < 60 min (1), DM (1) ➔ > 4 Aspirin * if > 2 events consider high risk and start Aspirin)*

QUESTION:

1. *Causes of loud first heart sound?*
2. *Causes of loud second heart sound?*
3. *Causes of splitting, Wide splitting, Wide fixed splitting, Reversed splitting, Single S2?*
4. *Causes of S3?*
5. *Causes of S4?*
6. *Gallp rhythm?*
7. *Summation Gallop?*
8. *Causes of Clicks?*
9. *Causes of Diastolic murmur?*
10. *Causes of systolic murmurs?*
11. *Intensity/Grades?*
12. *Sites?*
13. *JVP causes?*
14. *JVP waveforms?*
15. *Large a, Cannon a waves, absent a wave & Large v waves?*
16. *Causes of Irregular rhythm of pulse?*
17. *Define Tachycardia & bradycardia, give causes?*
18. *Different types of Pulses?*

Key:

7. *Loud first heart sound / Tapping apex beat (Mitral stenosis, Short PR interval like WPW, Tachycardia) ➔ soft first heart sound (Prolong PR interval like Rheumatic heart disease, IE & abscess, Heart block, mitral incompetence)*
8. *Loud second heart sound (loud A in HTN, Loud P in Pulmonary HTN) ➔ Soft second heart sound (soft A in AS, Soft P in PS)*
9. *Splitting is normal, wide splitting in PS, MR, VSD, Deep inspiration, RBB, Wide fixed splitting in ASD, Reversed splitting in AS, LBBB, PDA, Ventricular pacing, single S2 in Eisenmenger's best heard in Pulmonary area*
10. *S3 occurs after S2 in rapid ventricular filling like MR, VSD, poor LVF, like Post MI, CMP, Constrictive pericarditis, Restrictive CMP*
11. *S4 occurs before S1in atrial contraction against a stiff ventricle e.g. AS, HTN*
12. *Gallop rhythm is occurrence of S3 (Kentucky) or S4 (tene see) in tachycardia*
13. *Summation gallop is S3 and S4 in tachycardia occurring as a single sound*
14. *Ejection systolic click in Bicuspid aortic valve, Mid systolic in MVP, Mid diastolic opening snap before murmur of MS.*
15. *Early diastolic is low pitched (AR & PR, Graham steel PR 2 MS) ➔ mid diastolic murmur is high pitched & rumbling (MS, Carey comb Mitral thickening 2 RHD, Austin Flint flow murmur 2 AR).*
16. *Ejection systolic murmur in AS radiating to carotids, Aortic sclerosis, HOCM, PS*

➔ *Late systolic in MVP with Mid systolic click ➔ Pan systolic murmur in MR radiating to axilla & TR*

17. *Grades of murmurs (1 is soft heard after careful listening, 2 is soft heard after a while, 3 is easily audible, 4 is easily audible with a thrill, 5 is audible just by touching, 6 is audible without a stethoscope*
18. *Mitral is heard @ apex, Tricuspid @ lower left sternal edge, Aortic in right second intercostal, Pulmonary in left 2nd intercostal space*
19. *JVP normal is < 4 cm of water (Pericardial effusion, increased volume, Right heart failure, SVC obstruction, Tricuspid regurgitation, tamponed)*
20. *A for atrial contraction, C for closure of tricuspid valve, V for venous return in atrium against closed tricuspid, x descent is during ventricular systole, y descent is due to ventricular filling*
21. *Raise a waves in PS, Pulmonary HTN, TS ➔ Cannon a in atrial contraction against closed tricuspid like Heart block, Atrial flutter ➔ absent a in AF ➔ Large v in TR*
22. *Regularly irregular (Heart blocks & Ventricular bigeminy), irregularly irregular (AF, Ectopic) ➔ AF causes = DEPOSIT (Drugs, Electrolyte imbalances, PE, Organic heart disease like Alcoholic CMP, Ischemic heart disease, Thyrotoxicosis)*
23. *Tachycardia is HR > 100, causes (Hypotension, Hypovolemic, Heart failure, Embolism, Excruciating pain, Exercise, Anxiety, Treatment with Theophylline, Temp, Thyrotoxicosis) ➔ Bradycardia is HR < 60, causes (Post MI with AV block, Electrolyte imbalance, Acidosis, Athletes, Anesthesia, Raised ICP, treatment with Beta blockers, Low temp, Hypothyroid)*
24. *Pulses*
    a. *Strong pulse or Bounding pulse (CO2 retention, Liver Failure, Resp. failure, Sepsis*
    b. *Weak pulse (Hypovolemia, Shock, AS, Pericardial effusion)*
    c. *Slow rising pulse or Anacrotic pulse (Aortic stenosis)*
    d. *Collapsing pulse (AR, AV malformation, PDA, Hyper dynamic circulation)*
    e. *Bisferience pulse (Mixed aortic valve disease)*
    f. *Jerky pulse (HOCM)*
    g. *Alternans pulse i.e. alternating strong and weak pulse (LVD, CMP)*
    h. *Paradoxus pulse i.e. weak pulse in inspiration eg Constrictive pericarditis, Tamponade, severe asthma)*

QUESTION:

1. *MS? Causes or commonest cause, presentation, diagnosis, treatment?*
2. *MR?*
3. *AS?*
4. *AR?*

QUESTION:

1. *IE? Causes, Presentation, Diagnosis (criteria), Treatment?*
2. *RHD?*

QUESTION:

1. *MI / STEMI? Treatment, Contraindications to thrombolysis?*
2. *ACS / NSTEMI? Treatment?*

QUESTION:

1. *AF? Treatment?*
2. *VT? Treatment?*
3. *WPW? Treatment?*

Key:

1. *Irregularly irregular pulse, low volume pulse,*
2. *Broad complex + tachycardia*
3. *Short PR interval + slurring of upstroke of QRS complex + tachycardia ➔ Type A with + upstroke in V1 & left sided accessory pathway, Type B with – downslope in V1 & right sided pathway ➔ Avoid Adenosine, verapamil, Digoxin ➔ Treat by Esmolol, Fleicainide, Amiodarone ➔ definitive Rx is accessory bundle ablation*

QUESTION:

1. *Examine lower limb of the patient?*
2. *What are your findings?*
3. *What is the D/D each with pros cons?*
4. *What are causes of cord compression?*
5. *What are causes of Charcot's joint?*
6. *What are causes of extensor planters?*
7. *How will you investigate?*
8. *How will you treat?*

Key

1. *Examine the lower limb @ per protocol*
2. *Increase muscle tone, Ankle clonus + patellar clonus, Extensor plantar, exaggerated reflexes, ➔ Spastic Paraplegia*

QUESTION:

1. *Perform a minimental scale examination?*
2. *What is Dementia?*
3. *Cause of Dementia?*
4. *What are reversible causes of dementia?*
5. *How will you investigate?*
6. *How will you treat?*

Key:

QUESTION:

1. *What is celiac disease?*
2. *What is pathophysiology?*
3. *Definitive Diagnosis & Findings?*
4. *Treatment?*

Key:

QUESTION:

1. *What are types of liver abscess?*
2. *Etiology?*
3. *Diagnosis?*
4. *Treatment?*

Key:

QUESTION:

1. *Conn's syndrome?*
2. *Pathophysiology?*
3. *Diagnosis, explain how to perform Renin aldosterone ratio?*
4. *Treatment?*

Key:

QUESTION:

A young lady presents to the emergency with sudden onset of blindness since 2 hours while taking hot bath, she also gives history of similar episodes in the past and occasional episodes of diplopia.

1. *What is the diagnosis?*
2. *What is Lhermitte's sign, also give 3 causes of positive Lhermitte's?*
3. *What is the underlying pathology?*
4. *How would you proceed further, what is the diagnostic criterion called?*
5. *How would you treat the patient?*
6. *What is the prognosis of this disease?*

Key:

1. *Multiple sclerosis*
2. *Tingling sensation in limbs on flexing the neck, it is positive in MS, Vitamin B12 deficiency, Cervical spondylitis*
3. *MS is a demyelinating disorder of CNS not involving the peripheral nerves, it is autoimmune in origin ➔ Sensory + motor pyramidal & extrapyramidal + autonomic features*
4. *Diagnosis is clinical with different CNS signs distributed in time and space using Mc Donald's criteria, MRI spine and brain may show demyelinating plaques, Anti bodies against Myelin basic protein or myelin oligodendrocyte glycoprotein, CSF electrophoresis show oligoclonal bands of IgG, visual and auditory evoked potentials are positive*
5. *Acute attack is treated with Pulse methylprednisolone 1 gm. i/v per day for 3*

days, Disease modifying drugs include interferon 1 alpha and interferon 1 beta, Glatiramer, Mitoxantrone, Natalizumab, Alentuzumab, For spasticity use Baclofen, Dantrolene, Diazepam

6. *Initially the attacks relapse without any deficit, but accumulation of deficit over time results in permanent disability*

QUESTION:
A 25 years young lady reports to you that for difficulty in standing from sitting position especially from floor for the last 2 months. There is no history of fever, loss of appetite, difficulty in sleep, change in bowel habits, joint pains etc.
She also experiences episodes of double vision in evening which she attributed to excessive use of tranquilizers. Clinical examination failed to reveal any abnormality except for a small goiter in neck with euthyroid status.
Neurological examination failed to show any abnormality and deep tendon reflexes were 2+ BIL. Baseline relevant investigations are within normal limits with serum potassium 3.8 mmol/L

1. *Which one of the following is the most likely diagnosis?*
2. *What is the underlying pathogenesis?*
3. *Groups of muscles involved?*
4. *Exacerbating factors?*
5. *How would you diagnose?*
6. *How would you treat the condition & crisis?*

Key:

1. *MG*
2. *Formation of Acetylcholine receptor antibodies especially in patients with other autoimmune conditions like SLE, Thyrotoxicosis, Thymoma, Thymic cancer.*
3. *Eye > Face > Girdle.*
4. *Exacerbated by Conception, Change in climate, Decreased K, drugs, exercise, drugs include Antibiotics like gentamycin, tetracycline, beta blockers, quinine.*
5. *Tensilon test or Detrimental response on continuous muscle stimulation, x ray neck or CT neck for thymoma, Anti Acetylcholine receptor antibodies in 90% especially ocular disease.*
6. *Pyridostigmine , Prednisolone (B+C+D prophylaxis), Thymectomy ➔ For crisis use i/v Immunoglobulin or PE*

QUESTION:

A 45 years chronic smoker patient presents with difficulty in climbing stairs which improve toward the end of the day, he also complaints of dry mouth and impotence. On examination he has reduced power in all limbs with hyporeflexia.

1. *Which one of the following is the most likely diagnosis?*
2. *What is the underlying pathogenesis?*
3. *Groups of muscles involved?*

4. *Exacerbating factors?*
5. *How would you diagnose?*
6. *How would you treat the condition & crisis?*

Key:

1. *Eaton Lumberton syndrome*
2. *Anti-bodies against presynaptic calcium channel recptors*
3. *Limb girdle muscles*
4. *Small cell lung cancer*
5. *Antibodies, Incremental response to repeated muscle stimulation, serial x ray chest*
6. *2,3 diaminopyridine*

QUESTION:

A young boy of 12 years is brought to hospital with history of recurrent pain abdomen and vomiting. He has been having fever and infected pus oozing from lesion on left foot. Clinically he is dehydrated and hyperventilating.
His Arterial Blood Gasses result is as below:
"PH 7.1, pCO2 18 mmHg, PO2 96 mmHg, HCO3 12 mmol/L"

1. *What are the findings of ABG's & what is your diagnosis?*
2. *What is anion gap metabolic acidosis, Give causes?*
3. *What are the causes of non-anionic gap metabolic acidosis?*
4. *Investigations?*
5. *Complications?*
6. *Mention four important steps in his treatment?*

Key:

1. *Metabolic acidosis & Diabetic ketoacidosis.*
2. *Na − (Cl + HCO3) normal anionic gap is 10-18 ➔ causes are Alcohol, Aspirin poisoning, LA, Ethylene glycol poisoning, Salicylate poisoning, Methanol poisoning, Uremia, DKA*
3. *Non anionic metabolic acidosis in Ureteroenterostomy, Endocrine disorders like Addison's disease, Diarrhea, Carbonic anhydrase inhibitors like acetazolamide, RTA, Ammonium chloride, Pancreatic fistula*
4. *Blood glucose random, Urine for ketones, Blood osmolality (2xNa + urea + Glucose), ABG's, Blood CP, Culture, CXR, RFT's, Electrolytes especially K*
5. *Cerebral edema, Coma, Thromboembolism, infections, Aspiration pneumonia, Hypokalemia, Hypomagnesaemia, Hypophosphatemia, DIC, ARDS.*
6. *Steps in management:*

a. *Inj Humulin regular 50 units diluted in 50 ml of 0.9% saline at rate of 6 units per hour I/V and decreasing it to 3 unit if the blood glucose 270 mg/dl and to 2 units/ hourly when blood glucose 180 mg/dl.*
b. *Inj Normal Saline 1 liter in ½ hour, then 1 liter in 1 hour, then 1 liter in 2 hours and then 1 liter in 4 hours.*

c. *Inj Potassium chloride to be added if Hypokalemia documented (less than 3.5 mmol/L). Add 40 mmol to a liter of normal saline (To be infused at rate not more than 20 mmol per hour.*
d. *Antibiotics to control infection.*
e. *Catheterization to measure the urine output.*
f. *N/G in unconscious patient.*
g. *CVP line if hypotension and dehydration persists.*

QUESTION:

80 years old gentleman was brought in a unconscious state. He was markedly dehydrated. His lab investigations revealed

Serum sodium (153 mmol/l), Serum potassium (5.5 mmol/l), Serum urea (37 mmol/l), Serum creatine (290 mmol/l), Serum glucose (60 mmol/l)

1. *What is the diagnosis?*
2. *How will you treat this patient?*
3. *Write one most relevant complication this patient can develop*

Key:

1. *Hyper osmolar nonketotic coma*
2. *Treatment*
   a. *Intravenous fluids*
   b. *Intravenous insulin*
   c. *Sub heparin*
3. *DVT*

QUESTION:

A 68 years gentleman smoker having 40 pack years history is admitted in medical ICU with complaints of fever, cough with expectoration and deterioration in mental status of 10 days duration.
Clinical examination reveals pulse 108/ minute, BP 96/ 40 mmHg, respiratory rate 26/ minute, cyanosis ++ and clubbing++. Lungs examination shows coarse crepitation with wheezes BIL. Heart shows mild tachycardia.
The ABGs of this individual shows
PH 7.1, PaO2 36 mmHg, PaCO2 66 mmHg and HCO3 34 mmol/L.

1. *What is the abnormality on ABG's & what is the diagnosis?*
2. *What are the causes of this ABG abnormality?*
3. *How would you proceed?*
4. *What is the stepwise treatment?*

Key:

1. *Respiratory acidosis & COPD.*
2. *Lung problems like Severe asthma, COPD, ILD, Neuromuscular problems, Chest*

skeletal abnormalities

3. *Assessment using PEFR into mild (50-80), moderate (30-50), severe (<30), CXR, Blood cp, CRP, ABG's*
4. *Stepwise management*
    a. *Avoid smoking & Have vaccination lifelong pneumococcal.*
    b. *Bronchodilators like Beta agonist inhaler or ipratropium inhaler / nebulized*
    c. *Corticosteroid inhaled / oral with step c*
    d. *Combination of all above three*
    e. *LTOT if PaO2 <7.35 or PaO2 is 7.3-8 with pulmonary HTN – in a stable patient*
    f. *NIPPV if PH < 7.35*
    g. *Intubation & ventilation if PH < 7.25*
    h. *Avoid air travel if PaO2 < 6.7*
    i. *Emergency treatment*
        a. *Low flow O2 at 24%- 28%.*
        b. *Antibiotics.*
        c. *Bronchodilators like salbutamol by nebulization.*
        d. *Corticosteroids i/v or oral.*
        e. *Chest physiotherapy.*
        f. *Doxapram stimulation*
        g. *NIPPV / Ventilaory support as above if indicated*

QUESTION:

A young man is admitted because of breathlessness. His PEFR is 150 liters /min. His arterial Blood gas analysis on air is:

PH 7.5, PO_2 9 K Pa, PCO_2 3.5 KPa, Bicarbonate 12 mmol/ liter

1. *What is the diagnosis and what abnormalities are seen in the above data?*
2. *Write three therapeutic measures you will take?*
3. *Causes of this abnormality?*
4. *Write two further most useful investigations?*

Key:

1. *Respiratory Alkalosis*
2. *Management*
    a. *Reassurance*
    b. *Rebreathing into a bag*
    c. *Sedatives if required*
3. *Peripheral (Anxiety, Fever, Pneumonia, salicylate poisoning), central (stroke, meningitis, subarachnoid hemorrhage)*
4. *Investigations (Blood CP, CXR, CT/MRI, LP)*

QUESTION:

The following results are obtained in a 72 years old smoker who has presented with confusion and one episode of generalized fit

Serum Sodium (119 mmol / Liter), Serum Potassium (3.6 mmol / Liter), Blood Uric Acid (0.08 mmol / Liter), Urea (4.5 mmol / Liter), Glucose (5.2 mmol / Liter), Urinary Sodium (54 mmol / Liter)

1. *What abnormality is present in the given data and what is the most likely diagnosis?*
2. *Enumerate three more conditions which can give this biochemical picture?*
3. *Diagnostic criteria?*
4. *Management?*

Key:

1. *Hyponatremia & SIADH*
2. *Causes small cell lung cancer, Infections of lung like pneumonia, TB, Abscess, Aspergillosis, Injury and infections of Brain, Drugs like opiates, Head injury.*
3. *Hyponatremia Na < 125 with Hypo osmolality <260, concentrated urine with Na > 20 mmol/L*
4. *Management (cause removal, diuretics, fluid restriction, Demeclocyline)*

QUESTION:

30 years old married lady has been found to have Hb of 8.5gm/dl. MCV is low and serum Ferritin is low as well. What five relevant questions would you like to ask her?

Key:

1. *Dietary history*
2. *Menstrual history*
3. *Obstetric history*
4. *GI / Drug history / Parasites*
5. *Bleeding PR*

QUESTION:

A 36 years old man has the following blood counts on routine check up

Hb (12.8 gm/dl), MCV (64 fl), MCH (24 pg), MCHC (26 g/dl), WBC (5.6 x 10^9 , Platelets (237 x $10^{9/l}$, Hb Electrophoresis (A A2 F)

What is the cause of hematologic abnormalities and why?
What are different types of this disorder and what is pathogenesis?
What investigations are required?
What actions will you take?

Key:

1. *Beta thalassemia trait because of presence of HBA2 & presentation is mild.*
2. *Beta thalassemia due to point mutations on chromosome 11 (Beta thalassemia major with HbF & beta thalassemia minor with HbA2), Alpha thalassemia due to gene deletions on chromosome 16 (Hydrops with all alpha absent, HbH or Hb Bart with three Alpha absent, alpha thalassemia trait with 2 absent, alpha thalassemia disease with one absent)*
3. *Blood CP, Peripheral film, Reticulocyte count, Hb electrophoresis*
4. *Abortion if prenatal diagnosis, BMT if HLA compatible, Blood transfusion to keep Hb >9, C vitamin or ascorbic acid to increase Fe output, Desferioxamine as chelate, Evacuate spleen, Folic acid*

QUESTION:

A 15 year old girl presented with two days history of head ache vomiting and irritability. Her CSF examination revealed
1000 cells 100% lymphocytes, protein content was 55 gm/l and CSF sugars were 4 mmol.

What is the diagnosis?
How will you treat her?

Key:

1. *Viral Meningitis*
2.

QUESTION:

A 45 years old man presented with cough for 3 month with hemoptysis off and on. Now for 6 day patient was having head ache, vomiting and diplopia. His CSF examination revealed of 650 cells, 90% lymphocytes. Proteins were 1.68 gm/l CSF glucose was 2.3 mmol/L, Blood glucose simultaneously obtained was 6.8 mmol/L

a) What is the most likely diagnosis? (2)
b) How will you treat him? (2)
c) What is the cause of Diplopia? (1)

Key:

a) Tuberculosis Meningitis
b) Anti TB Drugs like INH, Rifampicin, Myambutol, Pyzinamide & Steroid.
d) Cranial nerve involvement or a part of basal meningitis.

QUESTION:

A 30 years old young lady, mother of three children is diagnosed to be suffering from

Pulmonary Tuberculosis. She is being discharged home and would like to ask you few questions:

1. *Is my disease curable?*
2. *How should I take the medicine and for how long?*
3. *Are there any side effects of treatment?*
4. *What precautions should I take at home?*
5. *Can I breast fed my baby?*

Key:

1. *Yes*
2. *4 drug Rx for 2 months & 2 drug Rx for 4 months*
3. *Yes*
4. *Following instructions*
    1) *Please wear mask*
    2) *Don't spit*
    3) *Don't share your utensils*
    4) *Take your medicines regularly it's very important*
    5) *You may have orange discoloration of urine*
    6) *Report back in case of Yellow eyes, Right UQ pain, Joint pains, Vision disturbance.*
    7) *Have regular follow at least monthly with LFT's, Uric acid levels, Eye check.*
    8) *Have a sputum check or sputum culture and AFB after 2 months*
    9) *Shift to 2 drugs after 2 months of Rx as told.*
    10) *Chemoprophylaxis of close contacts with INH for 6 months or INH + Rifampicin for 3 months (Adults tuberculin + and normal x rays, children < 16 years tuberculin +, Babies of tuberculin + mothers)*
5. *Yes, breast feeding is safe as very small amounts go into breast milk.*

QUESTION:

A 55 year old lady who had uncontrolled diabetes and hypertension for last 30 years has now presented with progressive dyspnea. His Lab reports revealed.

PH (7.1), PCO2 (18 mmHg), PO2 (90 mmHg), HCO3 (14 meq/l), Blood Glucose (6 mmol / l), Serum Sodium (132 meq/l), Serum Potassium (5.8 meq/l), Serum Urea (30 mmol/l)

1. *What acid base abnormality is present?*
2. *What is the underlying Cause of these metabolic derangements?*
3. *List two definite treatments for underlying conditions.*

Key:

1. *Metabolic Acidosis*
2. *Chronic renal failure*
3. *Treatment options*

a. *Hemodialysis or peritoneal dialysis*
b. *Renal Transplant*

QUESTION:

This patient has suffered Acute Myocardial Infarction 1 week back. He is being discharged home. What instructions would you like to give this patient regarding his heart problem?

Key:

1. *Introduce*
2. *Ask name and qualification*
3. *Ask about his knowledge of the disease and the drug*
4. *Explain your proceedings i.e. I will tell you about facts and then you can ask me questions*
5. *Explain the nature of disease & Emphasis on the regular use of drug for life.*
6. *Avoid smoking, Alcohol*
7. *Aspirin for life*
8. *Dietary advice regarding BP, Cholesterol, DM & their strict control and monitoring*
9. *Regular Exercise*
10. *Regular follow up & Lab investigations.*
11. *Questions*

QUESTION:

This gentleman has been diagnosed to have DVT of Left Leg. He has been started on Warfarin. Patient is stable and is being discharged home. What advice would you like to give to this patient regarding long term use of Warfarin?

Key:

1. *Introduce*
2. *Ask name and qualification*
3. *Ask about his knowledge of the disease and the drug*
4. *Explain your proceedings i.e. I will tell you about facts and then you can ask me questions*
5. *Explain the nature of disease & Emphasis on the regular use of drug for 6 weeks in a dose of ?*
6. *Regular follow up with PT/INR (between 2-3)*
7. *Report back if any signs of bleeding gums, PR or cutaneous bleed.*
8. *Questions*

QUESTION:

This lady is suffering from Chronic Hepatitis. She would like to ask few questions regarding her illness. Kindly answer her questions.

QUESTION:

A 30 years old lady is a known case of HCV related hepatitis. She is pregnant. She would like to ask you some question:

1. *Will this infection transmit to the baby?*
2. *Can I breast feed my baby?*
3. *Will close contact with my children transmit this disease?*

Key:

1.

QUESTION:

This patient a diagnosed case of Type 2 Diabetes Mellitus for 15 years has recently been started on Insulin for control of blood Sugar. What advice would you like to give to this patient regarding use of Insulin?

Key:

1. *Introduce*
2. *Ask name and qualification*
3. *Ask about his knowledge of the disease and the drug*
4. *Explain your proceedings i.e. I will tell you about facts and then you can ask me questions*
5. *Explain the nature of disease & Emphasis on the regular use of drug*
6. *Insulin storage*
7. *Calculation on insulin syringe*
8. *Site of insulin administration & look for signs of atrophy*
9. *Application procedure*
10. *Disposal of drug & syringe*
11. *Precaution of hypoglycemic episodes*
12. *Questions*

QUESTION:

A 35 years old gentleman diagnosed to have Bronchial Asthma. He is being discharged home from your ward after being treated for acute severe asthma.

What points would you like to tell him for further management at home?

Key:

a) *Avoid precipitating factors like smoking, linds / pets at home, any drugs like beta blockers*
b) *Use of Beta agonist, Blue inhaler as required/ Steroid Inhaler, brown or red as instructed (should already be using for 24 hours)*

c) *Buy a PEF meter & learn how to use.*
d) *Report back to GP in 1 week, and specialist 4 weeks.*
e) *Inhaler technique*

- Remove the cap and shake the inhaler
- Breathe out gently and place the mouthpiece into the mouth
- Incline the head backwards to minimise oropharyngeal deposition
- Simultaneously, begin a slow deep inspiration, depress the cannister and continue to inhale
- Hold the breath for 10 seconds

Fig. 19.20 How to use a metered-dose inhaler.

QUESTION:

1. *Take h/o Headache*
2. *Treatment of Migraine in normal subject & Pregnancy?*
3. *Exacerbating factor & Prophylaxis of Migraine?*
4. *Treatment of Cluster headache?*
5. *Rx of Analgesic headache?*
6. *Rx of Trigeminal Neuralgia?*

Key:

1. *History of headache*
   a. *Onset or duration (New & Sudden onset can be ICP, Eye related)*
   b. *Pattern ie intermittent or continuous, if intermittent than Frequency (intermittent or paroxysmal is Migraine or Cluster)*
   c. *Quality or Nature i.e. throbbing, sharp (Throbbing is Migraine)*
   d. *Aggravating factors like coughing, sneezing, sitting forward in ICP or Aura In case of Migraine aggravated by anxiety or stress*
   e. *Relieving factors e.g. Analgesia in ICP, or Antiemetic in Migraine or 100% oxygen in cluster*
   f. *Severity*
   g. *Timing of the day e.g. ICP in the morning, Cluster in the evening*

   h. *Site i.e. half, full, ring like*
   i. *Redness of eyes or watering of eyes, nose (in cluster)*
   j. *Eye site questions*
2. *Rx*
   a. *Analgesics like Aspirin / PCM + Antiemetic (metoclopramide)*
   b. *Tryptans @ the start of headache or Ergot derivatives*
   c. *In pregnancy Aspirin > PCM > Brufen*
3.
   a. *Avoid CHOCOLATE i.e. Cheese, OCP, Chocolates, Alcohol, Anxiety, Travel, Exercise*
   b. *If > 2 attacks per month give prophylaxis with either, 1st line are Pizotifen, or Propranolol, 2nd line are Verapamil, Valproate*
4. *Rx: 100% oxygen or sumatriptan, Prophylaxis: Verapamil or Lithium or methysergide or steroid.*
5. *Rx: Withdrawal: Suddenly in Analgesics & Tryptans, Gradually in Opioids*
6. *Rx: Carbamazepine, Phenytoin, Lamotrigine, Gabapentin, Surgical decompression*

QUESTION:
SNAKE BITE
- *Antibiotics (ceftriaxone) with Anti tetanus - Blood in syringe for 20 min – Crofab with Chlorpheniramine with Corticosteroid with circulatory support by Fluids – Don't SIT (Suck, Suture, I/D, Tourniquet) – Epinephrine in tray (im 0.5 ml of 1:1000 or iv 1ml of 1:10000)*

PARACETAMOL POISONING
- *Activated charcoal through NG tube in <4 hours – Acetyl cysteine (oral 140 mg stat & 70 mg 6 times – 150 mg/kg in 1 hour, 50 mg/kg in 4 hours, 100 mg/kg in 16 hours) – Bicarbonate – Circulatory support with fluids – Dextrose or Dialysis*

ANTI PSYCHIATRIC POISONING
- *Activated charcoal – Bicarbonate for QT – Bromocriptine (2.5 – 7.5 mg oral) for NMS – Benztropine (0.01 – 0.02 mg/kg im) for Extrapyramidal side effects – Circulatory support with fluids – Cold sponging for high temperature – Cardiac pacing for QT – Dantrolene (2-5 mg/kg iv) for NMS – Diphenhydramine (0.5 – 1 mg/kg iv) for extrapyramidal side effects*

ORGANOPHOSPHATE POISONING
- *Airway, Breathing, circulation, Decontamination, Exit from the Environment, Fluids, Gastric lavage, H, i/v Atropine, Antidote i.e. Pralidoxime*

WARFARIN POISONING – PK Factor
- *PT/INR – K vitamin oral 2.5 mg – FFPs or i/v activated factor vii*

QUESTION:

A 40 years old housewife presents with one month history of insomnia, decreased appetite, sadness, weeping episodes and lack of interest in everyday life. She is having suicidal ideas for last few days.

1. *What is your diagnosis?*
2. *Give 3 different methods of treatment giving at least one example (where applicable).*

Key:

1. *Depression or Severe depression or Severe depressive episode or Depression with suicidal ideation*
2. *Treatment (Drug treatment, Psychotherapy, ECT, Mood stabilizers, Light therapy, L- Tryptophan, Thyroxin)*

QUESTION:

A 35 years old housewife is brought to Psychiatry OPD by her husband, who is extremely concerned for her repeated hand washing. The patient attributes her hand washing to repeated thoughts of contamination. The patient cannot stop these thoughts and subsequent hand washing.

1. *What is your diagnosis for this patient?*
2. *This illness has to be differentiated from which psychiatric disorders?*
3. *Rx?*

Key:

1. *Obsessive compulsive disorder*
2. *D/D*
   a. *Anxiety*
   b. *Depression*
   c. *Phobias and obsessional fears*
   d. *Schizophrenia*
   e. *Organic cerebral pathology*
3. *SSRI's*

QUESTION:

18 years old girl presented to the psychiatry department accompanied by her mother. She complains of hearing voices threatening to poison her and commenting her every move for last 7 months. Her family believes that she is possessed by "Jins".

1. *What is your diagnosis?*
2. *Name three drugs which can be used to treat this disease?*

Key:

1.

QUESTION:

A 30 years old person is found lying in a park. He is confused and unable to walk. There

are multiple injection marks on his upper limbs. He recovers after few hours.

1. *What is your provisional diagnosis?*
2. *Enlist common complications of this condition?*

QUESTION:

A 60 years old person admitted in Medical ward for Pneumonia becomes very irritable and confused at night, he is frightened as he complains of seeing small animals on the wall. He believes a ward boy present near him has been sent to kill him.

1. *What is the most probable diagnosis?*
2. *Give management guidelines in this patient?*

QUESTION:

A 33 years old woman in her first trimester of pregnancy is evaluated by a psychiatrist. She feels as if she doesn't deserve to live. When questioned, she reports that she feels extremely down (low mood) guilty and worthless. Her husband says that before this, she was stable, content woman who was very happy about having this child. What would be your diagnosis according to the DSMIV?

1. *Diagnosis*

Key:

1. *Depression disorder*

QUESTION:

A 24-year-old man is brought to the emergency department by his parents after they found him covering the windows with aluminum foil because "they" were after his ideas. When asked who "they" are, he looks up at the sky and points to a faraway planet. Which statement correlates best with this patient's condition?

1. *Diagnosis*

Key:

1. *The patient is suffering from Paranoid type of Schizophrenia*

QUESTION:

A 30 years old Rickshaw driver has been admitted in Psychiatry department for treatment of heroin dependence. He used to smoke heroin in quantity of 2-3 gram per day and has stopped it abruptly.

Enlist ten common withdrawal symptoms in this situation.

QUESTION:

Define following terms giving one example of each

a) DELUSIONS
b) HALLUCINATIONS

Key:

A. Definition & Example
B. Definition & Example

Dissociation definition:
A process in which different parts of an individual's identity, memories, or Consciousness become split off from one another is called dissociation.

Hypochondria definition:
When there is no evidence that a person has a physical disease, but the person chronically worries that they have a disease and frequently seeks out medical attention, that person would be diagnosed with

Persecutory delusion

A false belief in which an individual believes that they are being watched by agencies or persons in authority with whom they have never interacted is known as a

People with learning disability have coexistent psychiatric illness, the common is mood disorder

- *Hepatitis A: Fecal oral→ 30 days incubation → AST very high (in thousands) → Passive immunization of close contacts HAIG 0.02 ml/kg i/m → Active immunization in infants > 2 years, travellers, military personnel or occupational hazard with inactive vaccine HAVRIX 1 ml i/m with booster 6/12 months or VAQTA 1 ml i/m with Booster 6/18 months*
- *Hepatitis B: Blood products/Sexual/Perinatal is commonest → 180 days incubation → Passive immunization of needle stick injury with HBIG 0.06 ml/kg i/m within 7 days & active immunization if patient is not previously immunized – Active immunization with recombinant vaccine ENGRIX 1 ml (20 mcg) i/m Deltoid 0, 1, 6 months or 0, 1, 2, 12 months or TWINRIX (A+B) 1 ml i/m Deltoid 0, 7, 21, 12 months*
- *PHASES OF HBV Infection: Immune tolerant, immune clearance, Inactive carrier, Chronic HBV*
- *INDICATIONS FOR Rx: Peg IFN Alpha 2A 180 ug once a week for 48 weeks with*

oral antivirals i.e. Entecavir or Talbuvidin or Tenofovir or Adefovir (nephrotoxic), Lamivudine in peripartum period, AIM: Dec HBV DNA load, Normalize ALT, Histologic improvement, Seroconversion i.e. HBe Ag to Anti HBe Conversion: HBe Ag Positive: PCR > 20000 + ALT > 2xNormal (Rx), PCR > 20000 + ALT < 2xNormal (Observe), Increased or persistent antigen + Icteric flares + age > 40 years (Rx), HBe Ag Negative: ALT > 2xNormal (Rx), ALT < 2xNormal (Observe), ALT < 2xNormal + PCR > 2000 (Liver Biopsy)

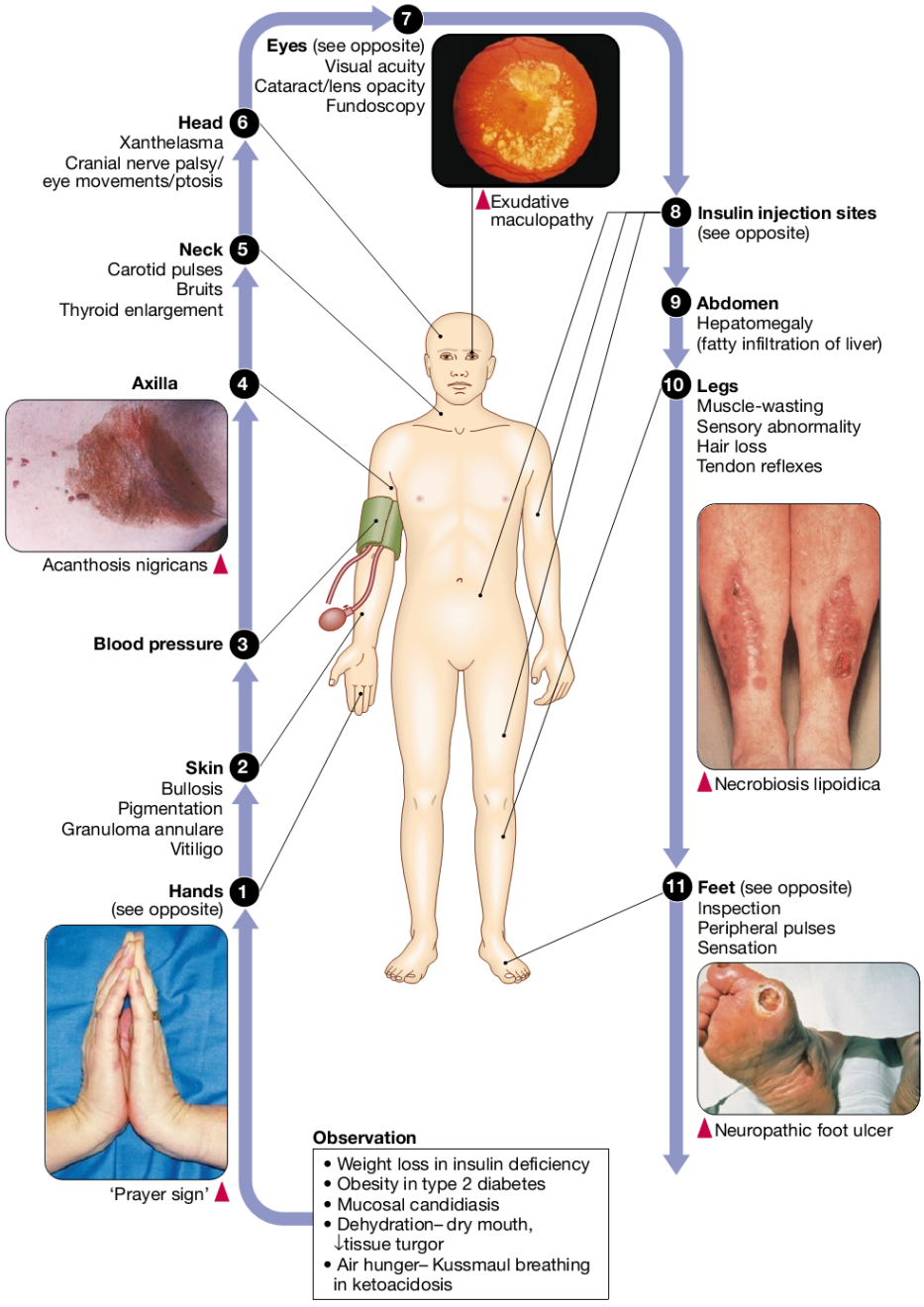
- *HBS Ag (+) & HBe Ag (-) & HBV DNA (-) → observe*
- *Good Prognostic factors → Nonblack → low Hepatic Iron → absence of cirrhosis → younger age → Genotype 2, 3 → Female Gender.*
- *Hepatitis C: Blood products/Sexual/iv drug abusser/vertical transmission in 3% – 150 days incubation – cirrhosis in 50% & chances of HCC – DIAGNOSE by HCV RNA - PEG IFN or IFN Alpha for 6 months in Genotype 1 & 6 months in Genotype2, 3, 4 with or without Ribavirin.*

HIV

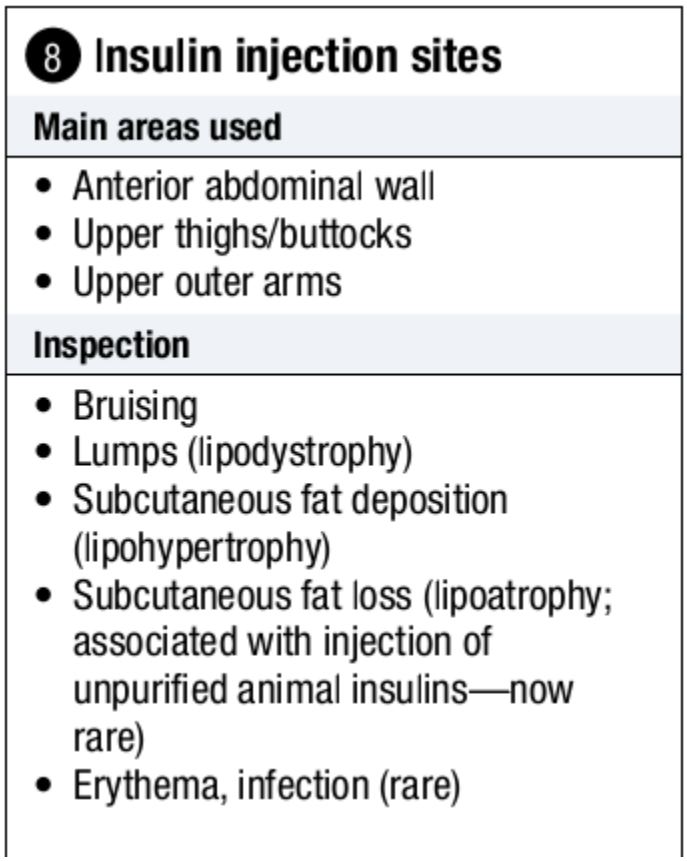
- *MOA: HIV uptake into CD 4 t cells require simultaneous interaction of 2 receptors i.e. one for HIV virus, other for chemokine either CCR5 or CXCR4 – intake of HIV – replication leading to increased viral load and destruction of T cell to declining T cell counts*
- *Homozygous mutation of CCR5 gene confers immunity to HIV*
- *Viral load predicts rate of disease progression, indicated therapy, & guides response to therapy*
- *CD 4 counts indicates degree of immune suppression, indicates prophylaxis, & guides to prognosis*
- *MODES: Most common is Heterosexual*
- *FEATURES: ACUTE: either asymptomatic or Lymphadenopathy syndrome – LATENT/WINDOW: with declining counts – OPPORTUNISTIC: below 500 usually*
- *< 500: Bacterial, TB, VZV, HSV, Vaginal candidiasis, Kaposi sarcoma, Hairy leukoplakia*
- *< 200: PCP, Toxoplasmosis, Cryptococcus, Coccidiomycosis, Cryptosporidiosis*
- *< 50: Disseminated MAC, Histoplasmosis, CMV retinitis, CNS Lymphoma*
- *DIAGNOSIS: ELISA (Detects Anti HIV antibodies, may take up to 6 months to appear) – Western Blot is diagnostic – HIV RNA PCR for viral load – BASELINE Tests (CBC, CXR, PPD, PAP smear, Serologies for toxoplasma, VZV, HSV, viral load)*
- *ACUTE HIV: Elisa may be negative so do viral load by PCR*
- *Rx: INDICATIONS: HIV specific illness like HIV nephropathy – Symptomatic patients like those with opportunistic infections regardless of viral load or cell count – CD count < 350 or viral load > 20,000 – Pregnant woman*
- *Two RTI (lamivudine preferred, other is zidovudine) + one NNRTI (Nevirapine, Efavirenz or Protease inhibitor (keeping in view the drug-drug interactions, patient tolerance & adherence)*
- *HIV & DRUG INTERACTIONS:*
- *Effavirenz → Gynaecomastia, Activate P450 and decrease OCP levels → females may become pregnant → Also decreases Indinavir, Methadone → features of Methadone withdrawal. ➔ Pigmentation of skin ➔ CNS toxicity ??*

- *Ematrictabine ➔ Pigmentation of skin*
- *Nevirapine → 15% drug reaction → rash & Deranges LFT (hypersensitivity)*
- *Zidovudien → Myalgia, Myositis, Pancytopenia ➔ Pigmentation of nails*
- *Atazanavir ➔ isolated hyperbilirubinemia*
- *Protease inhibitors like Indinavir, Ritonavir, Saquinavir, Nelfinavir interact with P450*
- *HIV & VACCINES:*
- *MMR is the only live vaccine that should be given to HIV positive individuals.*
- *Yellow fever vaccine can also be given.*
- *DON'T give oral polio vaccine to HIV positive patients or their contact.*
- *HIV & PREGNANCY: HIV patients with pregnancy should avoid Effavirenz – If not on HARRT therapy she should be given ZIDOVUDIN (AZT) intra partum and the baby should be given AZT for six weeks*
- *NEEDLE INJURY: Hepatitis B > HIV (1000:3) – Post exposure Rx: 2 reverse transcriptase inhibitors or standard Rx*
- *HIV & SYPHILIS: increase anti Treponemal titers so can be diagnosed by routine tests – penicillin failure rate is high in HIV*
- *EBV + HIV ➔ Oral hairy leukoplakia*
- *HHV 8 + HIV ➔ Kaposi sarcoma*
- *TB + HIV ➔ Pleural effusion or extrapulmonary TB*
- *HPV 16 ➔ oncogenic*

DIABETES MELLITUS



INSULIN SITES



8 Insulin injection sites

Main areas used

- Anterior abdominal wall
- Upper thighs/buttocks
- Upper outer arms

Inspection

- Bruising
- Lumps (lipodystrophy)
- Subcutaneous fat deposition (lipohypertrophy)
- Subcutaneous fat loss (lipoatrophy; associated with injection of unpurified animal insulins—now rare)
- Erythema, infection (rare)

OGTT

21.10 How to perform an oral glucose tolerance test (OGTT)

Preparation before the test

- Unrestricted carbohydrate diet for 3 days
- Fasted overnight for at least 8 hrs
- Rest for 30 mins
- Remain seated for the duration of the test, with no smoking

Sampling

- Plasma glucose is measured before and 2 hrs after a 75 g oral glucose drink

Interpretation (venous plasma glucose)

	Fasting	2 hrs after glucose load
Fasting hyperglycaemia	6.1–6.9 mmol/L (110–125 mg/dL)	< 7.8 mmol/L (< 140 mg/dL)
Impaired glucose tolerance	< 7.0 mmol/L (< 126 mg/dL)	7.8–11.0 mmol/L (140–199 mg/dL)
Diabetes	≥ 7.0 mmol/L (≥ 126 mg/dL)	≥ 11.1 mmol/L (≥ 200 mg/dL)

21.15 How to review a patient in the diabetes clinic

Body weight and BMI

Urinalysis
- Analyse fasting specimen for glucose, ketones, albumin (both macro- and microalbuminuria)

Biochemistry
- Lipid profile and renal, liver and thyroid function

Glycaemic control
- Glycated haemoglobin (HbA_{1c})
- Inspection of home blood glucose monitoring record

Hypoglycaemic episodes
- Number and cause of severe (requiring assistance for treatment) events and frequency of mild (self-treated) episodes
- Time of day when 'hypos' are experienced
- Nature and intensity of symptoms
- Ability to identify onset (awareness)

Blood pressure

Smoking

Eye examination
- Visual acuities (near and distance)
- Ophthalmoscopy (with pupils dilated) or digital photography

Lower limbs and feet
- Peripheral pulses
- Tendon reflexes
- Perception of vibration sensation, light touch and proprioception
- Callus indicating pressure areas
- Nails
- Deformity
- Ulceration
- Need for podiatry

Gestational diabetes

- **Glucose metabolism**: insulin resistance occurs in normal pregnancy, particularly in the second half. Gestational diabetes develops when the pancreas is unable to secrete sufficient insulin to compensate for the insulin resistance.
- **Risk factors**: include obesity, ethnicity (South Asian, black, Hispanic, Native American), family history of type 2 diabetes, previous glucose abnormalities during pregnancy and previous macrosomia.

Pregnancy in women with established diabetes

- **Glucose metabolism**: insulin doses must be increased substantially to overcome physiological insulin resistance.
- **Pre-conception preparation**: strict glycaemic control very early in pregnancy prevents fetal malformations. Pregnancy should be planned: folic acid supplementation is introduced before conception and patients with type 2 diabetes should usually be converted to insulin therapy. If possible, use basal-bolus insulin regimens.

21.29 Complications of diabetes

Microvascular/neuropathic

Retinopathy, cataract
- Impaired vision

Nephropathy
- Renal failure

Peripheral neuropathy
- Sensory loss
- Pain
- Motor weakness

Autonomic neuropathy
- Gastrointestinal problems (gastroparesis; altered bowel habit)
- Postural hypotension

Foot disease
- Ulceration
- Arthropathy

Macrovascular

Coronary circulation
- Myocardial ischaemia/infarction

Cerebral circulation
- Transient ischaemic attack
- Stroke

Peripheral circulation
- Claudication
- Ischaemia

S/E OF INSULIN

21.44 Screening for microalbuminuria (MA)

- Identifies incipient nephropathy in type 1 and type 2 diabetes; independent predictor of macrovascular disease in type 2 diabetes
- Risk factors include increased blood pressure, poor glycaemic control, smoking
- Random urine sample can estimate urinary albumin:creatinine ratio (MA values 3–30 mg/mmol (27–270 µg/mg)); normal range (mg/mmol) differs in males (< 2.5) and females (< 3.5)
- If possible, confirm MA with a timed collection of urine (overnight or 24 hrs) to quantify the albumin excretion rate (AER) (MA values 20–200 µg/min or 30–300 mg/24 hrs)

Who to screen

- Patients with type 1 diabetes annually from 5 yrs after diagnosis
- Patients with type 2 diabetes annually from time of diagnosis

Abnormal results

- Exclude recent (24 hrs) vigorous exercise, fever, heart failure, urine infection, prostatitis, menstruation
- Confirm observation twice within 3–6 mths
- Look for blood pressure above target levels

Box 21.52 Management of diabetic foot ulcers

Prevention

- Prevention is the most effective way of dealing with the problem of tissue necrosis in the diabetic foot. Advice to all diabetic patients includes:
  - Inspect feet every day
  - Wash feet every day
  - Moisturise skin if dry
  - Cut or file toenails regularly
  - Change socks or stockings every day
  - Avoid walking barefoot
  - Check footwear for foreign bodies
  - Wear suitable good-fitting shoes
  - Cover minor cuts with sterile dressings
  - Do not burst blisters
  - Avoid over-the-counter corn/callus remedies
- Advice to high-risk patients is as above plus:
  - Do not attempt corn removal
  - Avoid high and low temperatures
- A podiatrist is an integral part of the diabetes team to ensure regular and effective podiatry and to educate patients in care of the feet
- Specially manufactured and fitted orthotic footwear is required to prevent recurrence of ulceration and protect the feet of patients with Charcot neuroarthropathy

Treatment

- Remove callus
- Treat infection
- Avoid weight-bearing
- Ensure good glycaemic control
- Control oedema
- Undertake angiogram to assess feasibility of vascular reconstruction where indicated

ANICONVULSANTS

26.12 Limb weakness: assessing the cause from typical patterns of evolution

Vascular lesions
• Sudden onset (over minutes) followed by a stable period and gradual recovery
Neoplastic lesions
• Gradual in onset and progressive over weeks or months
Inflammatory lesions
• Fairly acute in onset (over a few days), persist for a time and then improve (e.g. in multiple sclerosis)
Degenerative disorders
• Evolve over months or years (e.g. motor neuron disease or cervical spondylotic myelopathy)

26.41 Guidelines for anticonvulsant therapy

- Start with one first-line drug (see Box 26.42)
- Start at a low dose; gradually increase dose until effective control of seizures is achieved or side-effects develop (drug levels may be helpful)
- Optimise compliance (use minimum number of doses per day)
- If first drug fails (seizures continue or side-effects develop), start second first-line drug whilst gradually withdrawing first
- If second drug fails (seizures continue or side-effects develop), start second-line drug in combination with preferred first-line drug at maximum tolerated dose (beware interactions)
- If this combination fails (seizures continue or side-effects develop), replace second-line drug with alternative second-line drug
- If this combination fails, check compliance and reconsider diagnosis (is there an occult structural or metabolic lesion or are seizures truly epileptic?)
- If this combination fails, consider alternative, non-drug treatments (e.g. epilepsy surgery, vagal nerve stimulation)
- Do not use more than two drugs in combination at any one time

26.43 Epilepsy during pregnancy

- **Fetal malformation:** most anticonvulsants increase the risk—twofold increase in risk with one drug; fourfold increase with two or more drugs. Start folic acid 5 mg daily for 2 months before conception to reduce risk.
- **Haemorrhagic disease of the newborn:** anticonvulsants increase risk. Give oral vitamin K 20 mg daily to the mother during last month. Give i.m. vitamin K 1 mg to the infant at birth.
- **Increased frequency of seizures:** monitor anticonvulsant levels and adjust the dose regimen accordingly.